NAVAL POSTGRADUATE SCHOOL

MONTEREY, CALIFORNIA

THESIS

90,000 TONS OF DIPLOMACY: HOW THE U.S. NAVY SUPPORTS NAVAL AVIATION

by

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June 2014

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REPORT DOCUMENTATION PAGE

Form Approved OMB No. 0704-0188

1. AGENCY USE ONLY ***(Leave blank)***	**2. REPORT DATE** June 2014	**3. REPORT TYPE AND DATES COVERED** Master's Thesis

4. TITLE AND SUBTITLE
90,000 TONS OF DIPLOMACY: HOW THE U.S. NAVY SUPPORTS NAVAL AVIATION

5. FUNDING NUMBERS

6. AUTHOR(S) Andrew B. Leatherwood

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Naval Postgraduate School
Monterey, CA 93943-5000

8. PERFORMING ORGANIZATION REPORT NUMBER

9. SPONSORING /MONITORING AGENCY NAME(S) AND ADDRESS(ES)
N/A

10. SPONSORING/MONITORING AGENCY REPORT NUMBER
N/A

11. SUPPLEMENTARY NOTES The views expressed in this thesis are those of the author and do not reflect the official policy or position of the Department of Defense or the U.S. Government. IRB protocol number ____N/A____.

12a. DISTRIBUTION / AVAILABILITY STATEMENT
Approved for public release; distribution is unlimited

12b. DISTRIBUTION CODE
A

13. ABSTRACT (maximum 200 words)

With the demise of Soviet Union, the U.S. Navy found itself without an adversary that could challenge its conventional war-fighting capability. It sought relevance and had to decide where to accept budgetary reductions. Abandoning high-dollar weapon systems and accompanying tactics became a tough issue. Throughout the cutbacks, naval aviation remained at the heart of the Navy's force. Naval aviation received support even though much of its capability outpaced all potential adversaries. Critics cite the cost of the aircraft carrier fleet relative to the missions the Navy now performs, and the steady improvement in anti-access weapons as reasons to invest in other technologies or decrease carrier numbers. Many now question whether the nation uses and operates the carrier force effectively. Nevertheless, naval aviation continues to provide the United States with a strong and creditable (although conventional and expensive) ability to accomplish America's worldwide commitment and conduct contingency operations.

14. SUBJECT TERMS Naval Aviation, Maritime Strategy, Bureaucratic Politics, Naval Strategy, Aircraft Carriers	**15. NUMBER OF PAGES** 93
	16. PRICE CODE

17. SECURITY CLASSIFICATION OF REPORT	**18. SECURITY CLASSIFICATION OF THIS PAGE**	**19. SECURITY CLASSIFICATION OF ABSTRACT**	**20. LIMITATION OF ABSTRACT**
Unclassified	Unclassified	Unclassified	UU

NSN 7540-01-280-5500

Standard Form 298 (Rev. 2-89)
Prescribed by ANSI Std. 239-18

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90,000 TONS OF DIPLOMACY: HOW THE U.S. NAVY SUPPORTS NAVAL AVIATION

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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN SECURITY STUDIES (STRATEGIC STUDIES)

from the

NAVAL POSTGRADUATE SCHOOL
June 2014

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ABSTRACT

With the demise of Soviet Union, the U.S. Navy found itself without an adversary that could challenge its conventional war-fighting capability. It sought relevance and had to decide where to accept budgetary reductions. Abandoning high-dollar weapon systems and accompanying tactics became a tough issue. Throughout the cutbacks, naval aviation remained at the heart of the Navy's force. Naval aviation received support even though much of its capability outpaced all potential adversaries. Critics cite the cost of the aircraft carrier fleet relative to the missions the Navy now performs, and the steady improvement in anti-access weapons as reasons to invest in other technologies or decrease carrier numbers. Many now question whether the nation uses and operates the carrier force effectively. Nevertheless, naval aviation continues to provide the United States with a strong and creditable (although conventional and expensive) ability to accomplish America's worldwide commitment and conduct contingency operations.

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LIST OF ACRONYMS AND ABBREVIATIONS

A2AD	anti-access and area-denial
AAW	anti-air warfare
AESA	active electronically scanned array
AEW	early air warning
AIPAC	American-Israel Public Affairs Committee
AMRAAM	Advanced Medium Range Air to Air Missile
AMSR	Aviation Maintenance-Supply Review
ASB	Air-Sea Battle Concept
ASW	anti-submarine warfare
ATO	air tasking order
BVR	beyond visual range
CENTCOM	United States Central Command
CFT	cross-functional teams
CNO	Chief of Naval Operations
COCOM	Unified Combatant Commanders
CS-21	Cooperative Strategy for 21st Century Seapower
CSAR	combat search and rescue
CSG	Carrier Strike Group
CV	aircraft carrier
CVN	aircraft carrier nuclear
CVW	carrier air wing
DDG	Guided Missile Destroyer
DPRK	Democratic People's Republic of Korea
DOD	Department of Defense
ESG	Expeditionary Strike Groups
FRP	Fleet Response Plan
FYDP	Future Years Defense Program
GWoT	Global War on Terror
HOMA	Health of Naval Aviation
JDAM	Joint Direct Attack Munitions

JSF	Joint Strike Fighter
JSOW	Joint Stand-Off Weapon
JTIDS	Joint Tactical Information Distribution System
LANTIRN	Low Altitude Navigation and Targeting Infrared for Night
LaWS	Laser Weapon system
LCS	Littoral Combat Ship
MCO	Major Combat Operation
MDA	Maritime Domain Awareness
MOTR	Maritime Operational Threat Response
NAE	Naval Aviation Enterprise
NAPPI	Naval Aviation Production Process Improvement
NATO	North Atlantic Treaty Organization
NIFC-CA	Naval Integrated Fire Control-Counter Air
NPT	Treaty on the Non-Proliferation of Nuclear Weapons
NSAWC	Naval Strike and Air Warfare Center
OEF	Operation Enduring Freedom
O-FRP	Optimized Fleet Response Plan
OIF	Operation Iraqi Freedom
OPLAN	operational plan
OPTEMPO	operational tempo
OSD	Office of the Security of Defense
PACCOM	United States Pacific Command
PGM	precision-guided munitions
PLAN	People’s Liberation Army-Navy
PTS	Perform to Serve
QDR	Quadrennial Defense Review
RCOH	nuclear refueling and over-haul
SAM	surface–to-air missile
SLAM-ER	Standoff Land Attack Missile-Expanded Response
SSBN-X	nuclear ballistic submarine
SSGN	cruise missile submarine
STOVL	short take-off vertical landing

TCBL	tentative conceptual baseline
TLAM	Tomahawk Land Attack Missile
TTP	tactics techniques and procedures
TTNT	tactical targeting network technology
UAV	unmanned aerial vehicle
UCAV	unmanned combat air vehicle
UCLASS	Unmanned Combat Air System
USSTRATCOM	United States Strategic Command
USWEX	under sea warfare exercise
VTOL	vertical take-off and landing

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ACKNOWLEDGMENTS

I would like to thank my beautiful wife, Mary, who has stood beside me on many long deployments and willingly followed me all over the globe. I praise the Lord every day that you are my wife. To my son, Everett, and daughter, Audrey, sorry I had to work so many weekends and long evenings to finish this project, taking time away from you. Thanks to my mother-in-law, Susan Rogers, for providing countless hours proofing my thesis. Also, thank you Professor James Russell and Professor Daniel Moran, whose classes and lectures expanded my knowledge in strategic thinking and gave me the insight to write this thesis. Your work has improved the skill sets of numerous officers, making the United States military a more effective warfighting instrument.

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I. INTRODUCTION

In August 2008, my crew completed the third from last arrested landing on the USS *Kitty Hawk* (CV-63), a ship that had conducted more than 400,000 similar landings since its commissioning in 1961. My squadron, VAW-115, flew the E-2C Hawkeye, and the squadron's oldest two airframes entered service with the primary mission of conducting early air warning against Soviet aircraft, a mission that ended when I was in fifth grade. During the USS *Kitty Hawk's* long life, many changes occurred to the strategic situation for the United States, but the U.S. Navy chose to support the aircraft carrier as its primary means of handling them. The long life span of naval aviation equipment presents both advantages in an extended return on investment and disadvantages in the possibility that technology, utility, or finical constraint might replace systems. Supporters and members of naval aviation labor daily to ensure that the ships and aircraft remain a critical piece of U.S. defense. The United States, however, has to be mindful not to let tradition and bureaucratic self-interest drive its decisions on what military systems to support, especially with such a large investment as an aircraft carrier.

I personally saw the dangers to aircraft carriers in 2006 as an undetected Chinese *Song* diesel submarine surfaced behind the USS *Kitty Hawk* as it conducted routine flight operations. The submarine threat does not even represent the newest technologically advanced systems, like the Chinese DF-21D, that pose a danger to aircraft carriers. The large expense and hazards to naval aviation leave many to question whether it is all worth it. This thesis will explore how intuitional interest for naval aviation developed in the U.S. Navy prior to the Soviet breakup, how naval aviation retained its strong presence in the U.S. Navy after 1991, and attempt to identify many of the prevalent challenges that jeopardize the future of aviation. Ultimately, I argue that naval aviation and the aircraft carrier provide a service to the United States that no other technology or service can, and the nation should continue backing naval aviation in a manner that supports Combatant Commander requirements and U.S. worldwide interest.

A. MAJOR RESEARCH QUESTION

With the demise of Soviet Union, the Navy found itself without an adversary that could match its capability. Along with the other services it sought relevance and had to decide where to accept budgetary reductions. Abandoning high-dollar weapon systems and accompanying tactics, around which entrenched institutional interests had developed, became a tough issue. Through the cutbacks naval aviation remained at the heart of the Navy's core mission of strike warfare. Critics claim that the type of battles that the Navy prepares for and maintains a capability to fight resembles the strategic environment of the Cold War era. Why has the aircraft carrier and naval aviation retained its strong Cold War capability, and is naval aviation's dominant role in jeopardy?

B. IMPORTANCE

The U.S. Navy's tasks include patrolling the world's oceans, contributing to conventional and nuclear deterrence for the United States and its allies, preparing for combat, restraining threats to the freedom of movement, fighting piracy, countering the drug trade, conducting humanitarian assistance efforts, augmenting land forces, protecting the homeland, and supporting operations for the Global War on Terror (GWoT). Naval aviation performs a considerable role in each of these missions. All military systems, however, have an opportunity cost, and determining if a systems price has become exceedingly exorbitant for the services it provides assist the military in remaining effective and efficient. An examination of why naval aviation retained its strong capability, without a major adversary at the Cold War's conclusion, will attempt to delineate how naval transformation affects naval aviation and highlights how short-term decisions have long lasting effects on future capability. Looking at current developments and decisions that could possibly jeopardize naval aviation's position assists the Navy in remaining a relevant and capable fighting force with the ability to meet the demands of the current strategic environment. The era of relaxed constraint on the military budget brought by the GWoT has concluded and transitioned into a controlled fiscal situation where aircraft and ship programs must fight again for their budget shares, much as they

did in 1991. When civilian and military leaders comprehend the actual effects that their choices have on naval aviation they can develop more effective methods to steer it.

C. LITERATURE REVIEW

1. Overview

Much of the literature written about naval aviation concerns its largest component, aircraft carriers, and their future affects the vast majority of naval aviation. The literature supporting this thesis is broken into three sections. The first section explores how the Navy established of institutional interest in naval aviation. The second section analyzes how naval aviation retained its Cold War capability in 1991. It contains three subsections: retaining naval aviation's capability after the Cold War, transformation in the military, and the influence of tactics and modernization efforts. The third section studies issues that may jeopardize naval aviation and contains three subsections: budgetary and political influence on naval aviation, adversary capability's effect on naval aviation, and non-core mission's effect on naval aviation.

2. Establishment of Institutional Interest in Naval Aviation

Since naval aviation's crowning achievements in World War II it has undergone several periods that have presented challenges requiring military leadership to fight for its existence. These times illuminate the U.S. Navy's strong institutional interest in naval aviation. Jerry Miller argues that the massive military drawdown and reliance on the capabilities of nuclear weapons at the conclusion of World War II threated the existence of naval aviation.[1] Defunding would have occurred if Navy commanders had not revolted against civilian leaders in 1949 and staked the aircraft carrier's role in delivery of nuclear weapons. Since then, naval aviation has remained at the Navy core. Miller explains that naval aviation remained generally unaffected in 1991 because it had proven itself in combat, and no one stood to question its role in national security. Its importance only grew when President George H. W. Bush removed nuclear weapons from Navy ships.[2]

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[1] Jerry Miller, *Nuclear Weapons and Aircraft Carriers: How the Bomb Saved Naval Aviation* (Washington, DC: Smithsonian Institution Press, 2001), ix, x.

[2] Ibid., ix, x, 182–83, 231, 246–49, 262.

3. Retaining Naval Aviation's Capability after the Cold War

At the Cold War's conclusion, the U.S. Navy sought to find relevance without a major adversary. According to the CNA document *The Navy at a Tipping Point*, because the peace dividend of the 1990s did not change the strategic situation as much as expected the Navy kept much of its Cold War tactics, forward deploy state of readiness, and force strength.[3] Naval forces and naval aviation remained in high demand from the Unified Combatant Commanders (COCOM), and it gained strength and appeased lawmakers through increased partnership with the Air Force.[4]

The Navy has produced multiple grand strategies and guidance documents since 1991 to provide broad direction to handle the changing strategic environment. The sheer number of published strategic guidance seems to indicate an attempt by the Navy to establish a definition of who is the enemy. Knowing whether naval aviation is the right tool for the job is difficult if the Navy does not know what the job is. Still, innovations in the Navy's arsenal, especially the improvement of precision guidance weapons, meant that naval aviation could participate in more operations and provide a wider range of offensive capability.[5] Even with an overall decrease of personnel and platforms the Carrier Strike Group (CSG) remained the prominent piece of forward readiness for the Navy.[6]

4. Transformation in the Military

Support for naval aviation raises important questions on the organizational behavior in the Navy toward naval aviation and the bureaucratic politics that support military programs. Has the Navy supported naval aviation in the matter it has because of thoughtful planning, threat analysis, strategic visions, and multiple presidential policies

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[3] Daniel Whiteneck et al., *The Navy at a Tipping Point: Maritime Dominance at Stake?* (Alexandria, VA: Center for Naval Analyses, 2010), 4–5. http://www.cna.org/sites/default/files/research/the%20navy%20at%20a%20tipping%20point%20d0022262.a3.pdf.

[4] Ibid., 5, 14, 19.

[5] Ernest J. King, *U.S. Naval Strategy in the 1990s*, ed. John B. Hattendorf (Newport, RI: Naval War College Press, 2006), 6–7.

[6] Ibid., 4, 30.

or did the bureaucratic politics of the Navy push for aviation's prominence because it supported the desired culture of the Navy, and the Navy, frightened to lose any of its power and portion of the budget, acted to protect itself? One would hope that the answer is that grand strategic policy, established by the Navy with appropriate civilian oversight and meeting the threats of national security, sustained naval aviation. There are differing thoughts on how transformation and innovation occur in the military and who controls the decision on what programs to use to support and create strategy. Barry Posen believes that political leaders push military innovation from the top down with nonconformists from within the military, and the motivation for change will develop from the need to counter a threat.[7]

Deborah Avant provides a counter argument. She states that policy set by civilian leadership is unable to make true changes in military doctrine.[8] Military leaders will cooperate with civilian desires only when its increases their position. Civilian led budgets restrain military ambitions and control activities more when a division exists in civilian leadership.[9]

Stephen Peter Rosen does not share similar views. He says that civilian leaders do not have control over innovation and that military leaders develop doctrine, but there exist different reasons why change occurs in peacetime and wartime environments.[10] During peacetime innovation is more possible, and the push for it will come from military leaders. Civilians are viewed as outsiders and can serve in a supporting role for the military member doing the change.[11] Change will occur depending on how the international security environment is viewed. Wartime innovation will result from failure. Civilians do not decide on what technology to develop just how to fund it.[12] If Rosen's

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[7] Barry Posen, *The Sources of Military Doctrine: France, Britain, and Germany between the World Wars* (Ithaca: Cornell University Press, 1984), 13, 17, 233.

[8] Deborah D. Avant, *Political Institutions and Military Change: Lessons from Peripheral Wars* (Ithaca: Cornell University Press, 1994), 74.

[9] Ibid., 130–31.

[10] Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca, NY: Cornell University Press, 1991), 1, 20–21.

[11] Ibid., 21.

[12] Ibid., 1, 20–21, 57, 255.

calculations are correct the U.S. Navy should guarantee that it does not wait until military failure to adapt the correct strategy. A collaborative effort from both civilian and military institutions could best determine the security environment. These three authors have differing views, but they all indicate that innovation in the military is difficult. The catalyst for transformation may depend on the strength of the leaders that are in place on both on the civilian and military side. The true danger occurs when the Navy's assets and culture define the strategic environment.

5. The Influence of Tactics and Modernization Efforts

Some publications remark that the U.S. Navy's effort to prevent anti-access and area-denial (A2AD) helped naval aviation. The coastal zone, where A2AD will likely occur, became acknowledged as the problem area in the 1990s. To counter such threats anti-submarine warfare (ASW) and anti-air warfare (AAW) progressed into high demand. The movement paid off in the Persian and Arabian Gulf operations, in support of land wars, and countering China's possible aggression toward Taiwan.[13] Instances like these keep naval aviation appealing to both military and civilian leadership.

A2AD has also influenced strategic thinking. An opponent's ability to limit air operations from fixed and maritime positions is viewed as one of the primary threats to the United States, and has led to the Air-Sea Battle Concept. Andrew Krepinevich argues that countries like China and Iran have increased their attempt to build effective A2AD mechanisms.[14] He adds that the advent of precision-guided munitions (PGM), the Navy's partnership with the Air Force, and incorporation of Tomahawk missiles on platforms like surface ships and submarines helped counter the threat.[15] The tactics that the Navy supports as a part of its culture helped keep naval aviation prominent.

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[13] Geoffrey Till, *Naval Transformation, Ground Forces, and the Expeditionary Impulse: The Sea-Basing Debate* (Carlisle Barracks, PA: Strategic Studies Institute, U.S. Army War College, 2006), v, 8, 12, 38–39; Ronald O'Rourke, *Naval Transformation: Background and Issues for Congress*, CRS Report RS20851 (Washington, DC: Library of Congress, Congressional Research Service, January 17, 2006), 1–2; Ronald O'Rourke, *Defense Transformation: Background and Oversight Issues for Congress*, CRS Report RL32238 (Washington, DC:Congressional Research Service, 2006), 2–5.

[14] Andrew Krepinevich, *Why Air-Sea Battle*? (Washington, DC: Center for Strategic and Budgetary Assessment, 2010), 1–2.

[15] Krepinevich, *Why Air-Sea Battle?* 1–2, 6–11.

Modernization efforts have also provided support for naval aviation and increased allure to civilian and military leadership. The amplified focus in the unmanned combat air vehicle (UCAV) aircraft and movement from single purpose platforms to easily upgradable aircraft capable of accomplishing multiple missions has aided Operations Enduring Freedom (OEF) and Iraqi Freedom (OIF).[16]

These changes do come at a high cost. The largest example is found in the Navy's pursuit of the F-35 Joint Strike Fighter (JSF). Jonathan Caverley and Ethan Kapstein identify the problems associated with the JSF's soaring cost as well as the military pursuit of other all-capable equipment. They believe that smaller and cheaper and less advanced equipment can meet the needs of national security.[17] Also they call for stricter political control over the acquisition and development process of defense articles.[18] Although Caverley and Kapstein have valid points relating to many pieces of defense equipment, one could easily argue that military leaders have a better understanding of required gear for defense. Still, national defense suffers if the United States is in a state of financial crisis, which can result from overspending.

6. Budgetary and Political Influence on Naval Aviation

Budget reductions can have negative effects on naval aviation's capability. The Chief of Naval Operations (CNO) remarked that cuts in ship and aircraft numbers would occur unless Congress ends the 14 billion dollar sequestration, which is currently

16 Guy M. Snodgrass, "Naval Aviation's Transition Starts with Why," *United States Naval Institute Proceedings* 139, no. 9 (2013), http://www.usni.org/print/27644; Thomas P. Ehrhard and Robert O. Work, *Range, Persistence, Stealth, and Networking: The Case for a Carrier-Based Unmanned Combat Air System* (Washington, DC: Center for Strategic and Budgetary Assessments, 2008), 3–5, 99, 109–13, http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCoQFjAA&url=http%3A%2F%2Fwww.csbaonline.org%2F4Publications%2FPubLibrary%2FR.20080618.Range_Persistence_%2FR.20080618.Range_Persistence_.pdf&ei=t5KNUrGYDYSH2gW78oCQCw&usg=AFQjCNFb8tkhVzFRPe9BsOZGS_ywKsgd8g&sig2=VvPFWON7Iu5Vxh429MRKdQ&bvm=bv.56988011,d.b2I.

17 Jonathan Caverley and Ethan B. Kapstein, "Arms Away: How Washington Squandered its Monopoly on Weapons Sales," *Foreign Affairs* 91, no. 5 (September, 2012): 1–2, http://search.proquest.com/docview/1034969006?accountid=12702.

18 Ibid., 1–5.

constraining DOD funds.[19] The expected result will be a loss of 25 aircraft and reduced training. Normally three CSGs and three Expeditionary Strike Groups (ESG) are ready to deploy with only weeks' notice, but the sequestration lowers that number to one apiece.[20] Reduced manning has also impacted performance and overburdened personnel. The Navy may expect to see larger funding cuts as a result of losing the public's support as the major focus continues to shift to fighting the land wars of GWoT.[21]

Efforts to save money have pushed civilian leadership to adjust how the Navy buys new equipment. The RAND Corporation used calculations to examine the long-term effects that changing from four to five year procurement plan would have on the construction of aircraft carriers. Their findings indicate that on a five-year cycle the Navy will only have 10 carriers by 2040, and this number does not support current forward presence goals.[22]

Not all political influences that hurt naval aviation are related to the budget. John Lehman studies the negative effects that occurred as a result of Tailhook 1991, the zero-tolerance for mistakes mentality against military leadership, and pointless paperwork that has led to decreased job satisfaction and increased procurement time for new platforms.[23]

7. Adversaries' Capability Effect on Naval Aviation

Captain Henry J. Hendrix argues that improvements in anti-ship missile technology, like the Chinese built DF-21D, have rendered the U.S. Navy's aircraft carrier fleet irrelevant.[24] Using cost effectiveness analysis he suggests that better options exist in

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19 Michael Fabey, "Greenert Details Potential Fiscal 2014 Aircraft, Ship Cuts," *Aviation Weekly*, September 05, 2013, http://www.aviationweek.com/Article.aspx?id=/article-xml/awx_09_05_2013_p0-613509.xml#.

20 Ibid.

21 Seth Cropsey, "The U.S. Navy in Distress," *Strategic Analysis* 34, no. 1 (January 2010): 35–37.

22 John F. Schank et al., *Changing Aircraft Carrier Procurement Schedules: Effects That a Five-Year Procurement Cycle Would Have On Cost, Availability, and Shipyard Manpower and Workload* (Santa Monica, CA: RAND, 2011), xi–xii, http://www.rand.org/content/dam/rand/pubs/monographs/2011/RAND_MG1073.pdf.

23 John Lehman, "Is Naval Aviation Culture Dead?" *United States Naval Institute Proceedings* 137, no. 9 (2011), http://www.usni.org/magazines/proceedings/2011-09/naval-aviation-culture-dead.

24 Henry J. Hendrix, *At What Cost a Carrier*? (Washington, DC: Center for a New American Security, 2013), 3, http://www.cnas.org/files/documents/publications/CNAS%20Carrier_Hendrix_FINAL.pdf.

unmanned drones and Tomahawk equipped submarines to contest anti-access efforts. Although Captain Hendrix acknowledges the diplomatic power that a CSG can have sitting off a country's coast, he considers actions such as these the catalyst for China's development of long-range anti-ship missiles.[25] Captain Hendrix does make a cost beneficial argument, but he only focuses on China as potential adversary. There are many other countries that do not have the ability to oppose an operating CSG. He also does not cover aircraft carrier defenses and problems with over-the-horizon targeting for missiles like the DF-21D. Dean of Naval Warfare Studies at the Naval War College Robert Rubel shares Captain Hendrix's view. He adds that a CSG can only function in an uncontested littoral environment.[26]

Ronald O'Rourke takes a different approach when viewing China's military buildup. His report sees a weakened U.S. Navy as fuel to strengthen China's naval ambitions. He argues the need to improve defenses against countering weapons, like the DF-21D, instead of retiring naval equipment. The DF-21 is not the first weapon in the history of naval aviation to threaten it.[27]

8. Non-core Mission's Effect on Naval Aviation

Some of the ways the United States uses naval aviation could decrease capability. RAND Corporation's publication examined the combat and noncombat, traditional and nontraditional ways that aircraft carriers have supported and could possibly support national interest. It concluded that the United States will increase its use of aircraft carriers more often to provide non-core mission support.[28] Captain Robert Watts observes the Navy's involvement in the non-core mission of humanitarian aid as

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[25] Ibid., 3–8.

[26] Robert Rubel, "The Navy's Changing Force Paradigm," Naval War College Review 62, no. 2 (Spring 2009): 15, http://www.usnwc.edu/getattachment/1f786f96-3e22-4b09-87ce-d24978893a15/The-Navy-s-Changing-Force-Paradigm---Robert-C--Rub.

[27] Ronald O'Rourke, *China Naval Modernization: Implications for U.S. Navy Capabilities*, CRS Report RL33153 (Washington, DC: Congressional Research Service, September 5, 2013), 61, 70.

[28] John Gordon IV et al., *Leveraging America's Aircraft Carrier Capabilities: Exploring New Combat and Noncombat Roles and Missions for the U.S. Carrier Fleet* (Santa Monica, CA: RAND, 2006), xiii–xvi.

detrimental to combat readiness. He questions the usefulness of aircraft carriers providing humanitarian support. He thinks the ships lose out on readiness, surge capability, and maintenance, which impacts the ship's lifespan.[29]

D. PROBLEMS AND HYPOTHESES

For a weapon system to remain as relevant to national security for as long as naval aviation has, is a remarkable feat. This accomplishment, however, came at a high price. U.S. aircraft carriers and naval aviation are the most expensive military technologies in the world.[30] The cost to operate a CSG for one day is $6.5 million.[31] Still, President Bill Clinton's question, "Where's the nearest carrier?" is the same one that many U.S. presidents and COCOMs have made for decades at the outbreak of unrest around the world.[32] Former Chief of Naval Operations Admiral Elmo Zumwalt (1970–1974) commented that carrier aviation represented the principle military asset available to the president during the four crises that occurred during Zumwalt's tenure.[33] Despite this securing the future of naval aviation has not always been easy, and budget cuts and efforts to modernize the armed forces have targeted it.

Are critic's claims about the overpowered and expensive capability of naval aviation justified? The support and flexibility that naval aviation provided the United States during conflicts since the end of the Cold War seem to say otherwise. However, the choice to fund naval aviation, in the manner it was, appears to have occurred because naval aviation supported Navy culture, present assets, and institutional interest rather than a true threat assessment. The Navy's rapidly changing strategic vision implied that the Navy wasn't sure who the enemy was. Maintaining a strong strike capability, which is now supporting the Air-Sea Battle Concept and anti-access, anti-denial protection, held

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[29] Robert Watts, "The New Normalcy: Sea Power and Contingency Operations in the Twenty-First Century," *Naval War College Review* 65, no. 3 (Summer 2012): 48, 57.

[30] Gordon IV et al., *Leveraging America's Aircraft Carrier Capabilities*, xv.

[31] Hendrix, *At What Cost a Carrier?*, 5.

[32] Bill Clinton, "Where are the Carriers?" Military, Global Security, accessed November 19, 2013, http://www.globalsecurity.org/military/ops/where.htm.

[33] John Lehman, *Aircraft Carriers: The Real Choices* (Washington, DC: SAGE, 1978), 5.

together the Navy's core mission. Tactics required transformation to meet the needs of OEF and OIF, as the land war required a prominence of close air support.

Naval aviation's current modernization program, in every major platform, will position the U.S. Navy in an advantageous position to handle blue, brown, and green water conflicts. Still, innovation in new capabilities and threats persuade many to believe that critical pieces of naval aviation, such as the aircraft carrier, have become irrelevant.[34] The Navy must fully examine these dangers and focus on the true requirements for national defense. It is unlikely that the Navy will abandon the aircraft carrier. What may change is how the United States employs naval aviation and what types of missions it trains for and conducts.

Manning, cultural attacks, non-standard tasks, core missions also effect naval aviation and bring many to question if the nation uses and operates the carrier force effectively. Some operational tempo and capability changes would increase combat efficiency. Aircraft carriers and naval aviation provide the United States with a strong, creditable ability to accomplish America's worldwide commitment and conduct contingency operations, and naval aviation possesses advantages that other technologies do not.

[34] Hendrix, *At What Cost a Carrier?*, 3.

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II. ESTABLISHMENT OF INSTITUTIONAL INTEREST IN NAVAL AVIATION

A. INTRODUCTION

The U.S. Navy's investment in naval aviation is just as important today as it was more than 70 years ago, despite growing trends to downplay naval air power through recent technological advancements. To understand the decisions made in favor of naval aviation since 1991, it is important to understand how the Navy's institutional interest in naval air power developed. Although naval aviation's successful legacy may not seem relevant to the current issues that jeopardize its future, the legacy does provide insight into why the Navy retained leadership support when hard budgetary decisions were presented. Also, administrative and budgetary decisions made during the distant past, such as the creation of OP-03V and ship construction plans, must be accounted for as the consequences still influence naval aviation's modern role and structure. The long life span of naval vessels, for example, the 50-plus years for many aircraft carriers, requires the modern Navy to develop strategy that incorporates weapon systems bought under much different past strategic environments.

B. PRE COLD WAR

Prior to the attack on Pearl Harbor, December 7, 1941, the Navy primarily viewed naval aviation as a supporting asset for its primary system, the battleship. Quickly, the Navy's opinion changed as the aircraft carrier became the decisive factor during the battles of Coral Sea and Midway. During the war naval aviation's importance continued to expand, and by the end Navy doctrine relied on the ability of large carrier forces to deliver limited strikes in the opening stages of conflict.[35]

The time period previous to the attack on Pearl Harbor can serve as a caution for the U.S. Navy not to neglect indicators of change. The Navy's reliance on the battleship incorporated over a hundred years of tradition and passion from those who served upon

[35]Jeffery G. Barlow, *Revolt of the Admirals: The Fight for Naval Aviation, 1945–1950* (Washington DC: Brassey's, 1998), 6–8, 21.

them. In 1921, an aerial attack demonstration against a captured German battleship indicated that technological change might render these cherished systems obsolete. Still, the Navy relied on the battleship as its mainstay for another 20 years and only adjusted its viewpoint after defeat. Today, the Navy's reliance on naval aviation continues as custom and passion have grown over the years. It is important for Navy leaders to see past these two elements and look at the factors of budgets, technology, and utility when objectively assessing if naval aviation is the proper weapon system to fund and support.[36]

C. THE COLD WAR

With the commencement of the Cold War the Air Force attempted to position itself and the atomic bomb as the centerpiece of the military. In the Air Force's view, nuclear weapons supplied all of the United States' strategic needs. As a result the Army and the Navy were both targeted for being irrelevant. In an effort to display unity with the other services, as Defense Secretary James Forrestal encouraged, the Navy did not openly contest the Air Force's assaults. As a result, the Navy suffered a loss in public and political support.[37] In 1949, Secretary of Defense Louis Johnson cancelled the aircraft carrier USS *United States*, which was already under construction, forcing the Navy to fight back. With the existence of naval aviation in jeopardy Admiral Arthur W. Radford, Captain Arleigh A. Burke, and Admiral Donald D. Griffen publicly revolted against civilian leaders. First, they attempted to attack the usefulness of nuclear weapons to fight conventional wars. This approach failed causing them to transition their efforts and position the Navy in a supporting role for the nuclear mission. The aircraft carrier provided an optimal nuclear weapons delivery platform because it eliminated the need for fixed bases, appealing to civilian leadership.[38] The Navy preserved its commitment to naval aviation, and soon the nation would use its capability.

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[36] Robert L. O'Connell, *Sacred Vessels: the Cult of the Battleship and the Rise of the U.S. Navy* (Oxford: Oxford University Press, 1991), 1–7.

[37] Barlow, *Revolt of the Admirals*, 63.

[38] Miller, *Nuclear Weapons and Aircraft Carriers*, ix, x, 182–83, 246–49; Lawrence Freedman, *The Evolution of Nuclear Strategy*, 3rd ed. (New York: Palgrave MacMillan, 2003), 27–28.

Within eight days of the Communist invasion of South Korea Navy aircraft conducted strikes against airfields, railways, and bridges.[39] As the war intensified, it became obvious that the U.S. military was not ready for a conventional fight. Louis Johnson's culling had not stopped with the Navy's aircraft carriers, and now the United States needed to rebuild. Many historians believe that the decision to reduce the Navy to six aircraft carriers played into the Communist force's decision to invade South Korea.

The Navy began to see the cancelation of the USS *United States* as an opportunity to construct a much larger and more capable class of aircraft carrier. The result was the USS *Forrestal* (CV-59), which entered service in 1955. Its design solved many safety and operational issues and paved the path to the larger, more capable nuclear powered aircraft carriers.[40] These changes supported the heavier advanced jet aircraft that the Korean War produced, and provided enough speed to outrun improved Soviet submarines.[41] By the end of the Korean War naval aviation had flown 40 percent of the sorties, and carrier-based air compensated in many instances for the lack of territory for ground operating airfields.[42]

After Korea conventional warfare took a temporary pause and the Air Force attempted its second attack on naval aviation in 1960 with plans for the Strategic Command, which would eliminate the Navy's role in nuclear weapons delivery. Arleigh Burke, who was now Chief of Naval Operations (CNO), brokered a compromise with Secretary of Defense Thomas Gates to prevent the mission loss. The Navy also had the submarine launched Polaris missiles that defused the Air Force proposal. The development of the United States Strategic Command (USSTRATCOM) would not occur until 1992. Losing the nuclear role would have made the justification for large carrier forces difficult.[43]

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[39] John Winton, *Air Power at Sea: 1945 to Today* (New York: Carroll & Graf, 1987), 17.

[40] Miller, *Nuclear Weapons and Aircraft Carriers*, 184, 191–92; Lehman, "Is Naval Aviation Culture Dead?"

[41] Winton, *Air Power at Sea*, 63.

[42] James L. Holloway III, *Aircraft Carriers at War: A Personal Retrospective of Korea, Vietnam, and the Soviet Confrontation* (Annapolis, MD: Naval Institute Press, 2007), 441.

[43] Miller, *Nuclear Weapons and Aircraft Carriers*, 246–48.

In 1965, as the United States increased its efforts in the Vietnam War, naval aviation had a more advance aviation arsenal, due to the speed and range of improvements that had occurred since the Korean War. These advantages paid off in the 1962 Cuba Missile Crisis as A-7 Corsairs provided photoreconnaissance of Soviet missile sites. Naval aviation provided some of the initial air attacks on Vietnam as President Johnson ordered Operation Pierce Arrow in response to the Gulf of Tokin incident. Throughout the war, naval aviation flew half of all sorties, and provided a more cyclic strike capability than Air Force attacks, which had to originate from a further distance in Thailand. [44] Competition, however, between the Air Force and the Navy over who could provide the most cost effective means of air support led both to exaggerated reports on the levels of effectiveness.[45] Much as in the Korean War, carriers operated unopposed offshore, but they did not escape danger as three separate fires severely damaged three carriers and destroyed their air wings.

Commissioned in 1961, the first nuclear carrier USS *Enterprise* (CVN-65) provided support in the Vietnam War that did not require constant refueling at sea. Secretary of Defense Robert McNamara, however, delayed the Navy's plans to continue on a path toward an all-nuclear propelled carrier fleet. The two following carriers, USS *John F. Kennedy* (CV-67) and USS *America* (CV-66), utilized conventional power, under the belief that nuclear propulsion was not cost effective. With the commencement of construction on the USS *Nimitz* in 1968, the Navy moved once again toward nuclear propulsion until 1970 when Senator Walter Mondale's quest to cut the defense budget specifically targeted nuclear aircraft carriers. Gaining support from others in Congress he introduced an amendment to halt follow on carrier construction. Senator John C. Stennis, namesake for CVN-74, provided testimony that helped remove the injunction, thus allowing the Navy to continue building. To handle construction and planning for carrier construction CNO Thomas Moorer created a staff group called OP-03V.[46] During the

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[44] Holloway III, *Aircraft Carriers at War*, 184, 192, 247;

[45] Morton H. Halperin, Priscilla Clapp, and Arnold Kanter, *Bureaucratic Politics and Foreign Policy*, 2nd ed. (Washington, DC: Brookings Institution Press, 2006), 42, 49.

[46] Holloway III, *Aircraft Carriers at War*, 254–58.

hearings "the OP-03V testimony in support of nuclear carriers became the basis of the justification for future carrier construction," and it has stood ever since.[47] The Ford and Carter administrations renewed pressure on carrier production as the Navy sought funding for the USS *Theodore Roosevelt* (CVN-71). The administrations' principal argument pushed for Tentative Conceptual Baseline (TCBL) carriers, which were conventionally powered smaller vessels used mainly for vertical take-off and landing (VTOL) aircraft. To counter this argument the Navy conducted its own internal analysis in the Sea-Based Air Master Plan (1979-80) and the Sea-Based Air Platform Project (1981-82) that determined that the best path for naval aviation utilized large deck carriers. President Carter's opposition deteriorated when the USS *Nimitz* (CVN-68) successfully met his tasking during an extended deployment and the Iranian hostage situation monopolized his time.[48]

In the 1980s, the Navy decided to develop a collective maritime strategy to focus its efforts on power projection against the Soviet Union. The emphasis on nuclear warfare in the '60s and '70s had delayed this movement. In the 1980s, more military commanders began to believe that conventional arms could win the Cold War. The Navy elected to not participate in the shared Army and Air Force plan of Air-Land Battle, and it essentially prepared itself to fight the Soviets alone. The Soviets had constructed a formidable open-ocean (blue water) navy in the 1970s that provided Secretary of the Navy John Lehman an opportunity to sell naval superiority as a crucial piece to victory. Emphasizing the importance of carriers and their strike capability, Maritime Strategy looked to take the fight to the shores of Soviet naval facilities. Enormous efforts went in to anti-submarine warfare to reduce the threat to carriers and improve aircraft capability.[49]

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[47] Holloway III, *Aircraft Carriers at War*, 258.

[48] Scott C. Truver, "Now Hear This—'Semper CVN!' " *United States Naval Institute Proceedings* 139, no. 9 (2013), http://www.usni.org/magazines/proceedings/2013-09/now-hear-'semper-cvn.

[49] Frederick H. Hartmann, *Naval Renaissance: The U.S. Navy in the 1980s* (Annapolis, MD: Naval Institute Press, 1990), 200, 212, 214–15; King, *U.S. Naval Strategy in the 1990s*, 18.

D. PERSIAN GULF WAR

The Navy's strong ability to work independently resulted in a difficult time operating in a joint environment during the Persian Gulf War, leading the Navy to supply a mostly supporting role. Many of the problems came as a consequence of not participating in the Air-Land Battle Concept, and the Navy's resistance to joint warfare.[50] Naval aviation proved that it could successfully work with the Air Force in Operation El Dorado Canyon in Libya 1986, which became a proud moment in naval aviation. In Desert Storm, however, the Air Force's command and control systems had a more prominent role, which made Navy commanders envious. Naval aviation suffered criticism for a lack of sophisticated munitions and outdated equipment. One glaring example was the Navy's inability to receive the daily Air Tasking Order (ATO) without physical copies being flown out to sea. Air warfare primarily won the war, and naval aviation conducted 35 percent of the sorties with six carriers.[51] The precise munitions guidance systems and versatile aircraft that the Air Force utilized resulted in the legislative thought that technology could outperform higher levels of manpower. At the end of the war the Navy began to regroup and improve itself.[52]

E. CONCLUSIONS

Historical events have had a profound influence on the development of the Navy's institutional interest in naval aviation. The support a weapons systems receives is often more important than the utility it provides when determining if government programs will continue. Policy makers tend to rely on methods that have worked in the past. However, previously successful policies become over used or continue to receive funding even when they do not properly apply to the situation at hand or strategic environment.[53] This does not mean that naval aviation has reached the point where America should defund it,

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50 Benjamin S. Lambeth, *American Air Power at the Dawn of a New Century* (Santa Monica, CA: RAND, 2005), 2.

51 Holloway III, *Aircraft Carriers at War*, 443.

52 Peter D. Haynes, "American Naval Thinking in the Post-Cold War Era: the U.S. Navy and the Emergence of a Maritime Strategy, 1989–2007" (Ph.D. dissertation, Naval Postgraduate School, 2013) 91–94; King, *U.S. Naval Strategy in the 1990s*, 18; Holloway III, *Aircraft Carriers at War*, 441–44.

53 Glenn P. Hastedt, *American Foreign Policy*, 9th ed. (New York: Pearson, 2011), 82–83.

or that modernization efforts cannot keep it a viable resource for the country. What it means is that leaders must comprehend that factors like passion can influence decisions. Some of the same augments made against naval aviation in the past return periodically, and the Navy uses many of the same defenses. The Navy should put more research and thought into future strategic needs and the Navy's role in meeting them, considering budgets, technological advances and utility.

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III. RETAINING NAVAL AVIATION'S CAPABILITY AFTER 1991

A. INTRODUCTION

In his recent *Proceedings* article Scott Truver wrote, "the Obama administration has remained steadfast in its decision to sustain 11 CVNs and ten carrier air wings and continue with the next-generation USS *Gerald R. Ford* (CVN-78) class-even in the face of excruciating fiscal cuts."[54] The current administration is not the first one to support the U.S. Navy's commitment to naval aviation. However, after the Soviet collapse in 1991 the Navy faced challenges in preserving support for expensive weapon systems as the United States reduced the size of the armed forces. Through the cutbacks naval aviation remained at the heart of the Navy's core mission of strike warfare. Critics claim that the type of battles the Navy prepares for and maintains a capability to fight fit the Cold War era instead of today's strategic environment. Meanwhile, successful employment in Afghanistan and Iraq and China's rise in military power leave many thankful for the power that naval aviation possesses. The Navy's well-established institutional interest in naval aviation, the Navy's commitment to strike warfare and anti-access, anti-denial protection, the adaptability of its systems and technologies, and the bureaucratic structure of the government meant that naval aviation received support even though much of its capability has not had an adversary in many years.

B. THE COLD WAR ENDS AND THE NAVY SEEKS A JOB

As the Cold War drew to a close in 1991, the U.S. Navy, like the other armed services, sought relevance without a major adversary and had to decide where to accept budgetary reductions. Disputes arose within the Navy over how to structure strategy, build capacity, and what type of preparedness best provided security for the strategic environment. Abandoning high-dollar weapon systems and accompanying tactics with supportive institutional interests became a tough issue. Naval aviation played a role in 70 percent of the crises that the Navy had responded to since 1972, creating a large amount

54 Truver, "Now Hear This—'Semper CVN!'"

of reliance on its strong capability.[55] However, cuts had to be made and carrier strength fell from 15 in 1991 to 12 by 1994. The total Navy ship number dropped by 125 in the same time frame.[56] Naval aviation took the brunt of the 10 billion dollar defense spending cut in 1990.[57] The Navy defunded a few of naval aviation's costly development programs, such as the carrier based A-12 Avenger stealth bomber. Also, the job security provided by the nuclear weapons delivery role ended in 1991 when President George H. W. Bush removed nuclear weapons from all Navy ships.[58] The Tailhook conference scandal made its way through naval aviation's ranks costing the careers of 300 aviators. The Navy sought to identify America's potential enemies and develop its force around the threat, but this was a difficult task.[59] In addition, the United States collectively had difficulty determining who exactly the opponent that the nation should defend against was. The 1992 National Military Strategy, which the U.S. National Security Policy molds, expressed the necessity for the armed forces to handle unexpected situations from all over the globe with a decreased budget. It acknowledged that the new situation presented a more complex environment than the Cold War did, and emphasized joint operations between the services as well as a forward presence.[60]

The Navy, considering Congress's frustrations, increased its joint capability with the Air Force.[61] The *National Military Strategy's* demand for forward presence resounded well with the Navy because remaining combat ready through a forward deployed state had been its overall strategy since the 1940s. Carriers with an embarked air wing (CVW) fulfilled the forward presence requirements that COCOMs continued to

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55 Haynes, "American Naval Thinking in the Post-Cold War Era," 105.

56 Ibid., 128.

57 Christopher M. Jones, "Roles, Politics, and the Survival of the V-22 Osprey," in *The Domestic Sources of American Foreign Policy: Insights and Evidence*, 6th ed., ed. James M. McCormick (New York: Rowman & Littlefield, 2012), 365.

58 Miller, *Nuclear Weapons and Aircraft Carriers*, 262

59 Ibid., 262; Jones, "Roles, Politics, and the Survival of the V-22 Osprey," 365.

60 U.S. Department of Defense, *The National Military Strategy of the United States* (Washington, DC: Department of Defense, Government Printing Office, January 1992), 6–7, 26.

61 Whiteneck et al., *The Navy at a Tipping Point*, 19.

request.[62] The strategic situation, which demanded high military involvement, did not change as much as the United States assumed it would, and the peace dividends of the 1990s did not have as strong an influence toward stopping smaller conflicts.[63] In fact, the Soviet's had not responded to a crisis that the United States had acted upon since 1980.[64]

C. THE INFLUENCE OF DOCTRINE AND TACTICS SUPPORTING NAVAL AVIATION

1. Doctrine

The document *From the Sea* was the Navy first attempt at developing post-Cold War strategy. It attempted to shift the Navy's mindset "from power at sea to power from the sea," in support of littoral power projection operations.[65] One of its key aspects emphasized the need of naval aviation to support Marine land campaigns. Keeping with Navy culture, strike warfare would provide the majority of support for the Marines; while anti-submarine warfare (ASW) and anti-air warfare (AAW) remained in high demand to protect friendly forces as they operate in proximity to shore.[66] Even though the Navy shifted focus toward expeditionary operations, it maintained many of its Cold War tactics, mainly strike warfare, which provided funding security for naval aviation. The Navy now would only have to provide protection in localized areas where a crisis emerged and not the entire globe. Many nations shared this movement to an expeditionary operations mindset, as the financial benefits were hard to pass up. Still, the Navy believed that maintaining strong naval diplomacy could reduce the chance for high-intensity conflict. To ensure that this capability remained, the Navy accepted budget cuts in order to protect a 12-carrier force and boasted in its ability to operate independently.[67]

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62 Whiteneck et al., *The Navy at a Tipping Point*, 14, 19.

63 Ibid., 4–5.

64 Haynes, "American Naval Thinking in the Post-Cold War Era," 105.

65 Till, *Naval Transformation, Ground Forces, and the Expeditionary Impulse*, 2.

66 Ibid., v–vi, 12

67 U.S. Navy, *From the Sea* (Washington, DC: GPO, 1992), 2, 8, http://www.navy.mil/navydata/policy/fromsea/fromsea.txt; Haynes, "American Naval Thinking in the Post-Cold War Era," 115, 128, 212.

From the Sea would not be the Navy's last attempt at doctrine development, and *Forward From the Sea*, the next edition, replaced it almost immediately. Since 1992, the U.S. Navy developed nine grand strategic documents, along with many smaller guidance whitepapers, to provide broad direction to handle the changing strategic environment.[68]

U.S. Naval Grand Strategies	
1986	Maritime Strategy
1990	The Way Ahead
1991–1992	From the Sea
1993–1994	Forward From the Sea
1995–1996	2020 Vision
1996–1997	Anytime, Anywhere
1998–2000	The Navy Strategic Planning Guidance
2000–2004	Seapower 21
2005	The 3/1 Strategy
2005–2006	The 1,000-Ship Navy
2007–Current	A Cooperative Strategy for 21st Century Seapower

Table 1. Naval Grand Strategies since 1986[69]

The sheer number of documents suggests that the Navy continually attempts to determine the most effective means to remain relevant. Knowing whether naval aviation is the right tool for the job is difficult if the Navy does not know what the job is. The lack of a specific mission or enemy may have allowed naval aviation to continue unquestioned because the threat of multiple scenarios remained. Still, naval aviation found repeated

68 King, *U.S. Naval Strategy in the 1990s*, 7.

69 Haynes, "American Naval Thinking in the Post-Cold War Era," vii–ix.

support from the OPNAV's Strategy and Concepts Branch (N531).[70] The carrier's ability to accomplish both kinetic and non-kinetic missions and an air wing's ability to provide 80–125 sorties a day gave naval aviation the support it needed to continue. The 1995 strategy *2020 Vision* once again established the importance of strike warfare to the Navy.[71] The 1996 *Joint Vision 2010*, which attempted to provide the Chairman of the Joint Chief's overall guidance for the services in the creation of the 1997 *Quadrennial Defense Review* (QDR), and the 2010 *Joint Vision 2020* placed technological superior assets that could dominate a war zone, like air power, at the top of military capability.[72]

America's intervention in peacekeeping operations in the early 1990s had a profound effect on the Clinton Administration's willingness to utilize armed forces. After failure in Somalia, resistance in Haiti, and non-involvement in Rwanda, National Security Advisor Anthony Lake remarked, "our armed forces primary mission is not to conduct peace operations but to win wars."[73] Repeated air campaigns occurred throughout the '90s in the skies over Iraq, and the Navy and the Air Force shared the mission. With foreign policy focused on crisis response and a renewed attention on economic issues, support for the Navy's strike capability came from the fear of a resumption of war with the Democratic People's Republic of Korea (DPRK) in the summer of 1994. After leaving the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in March 1993 the DPRK embarked on a quest to become a nuclear capable nation.[74] However, the Agreed Framework compromise silenced these fears and naval aviation would not see major action until Operation Allied Force in Kosovo 1999. During that campaign, naval aircraft flew 3,100 sorties and accounted for half of all air support provided.[75]

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[70] Haynes, "American Naval Thinking in the Post-Cold War Era," 170.

[71] U.S. Department of Defense, *Joint Vision 2020* (Washington, DC: U.S. Government Printing Office, 2000), 1–3, http://www.fs.fed.us/fire/doctrine/genesis_and_evolution/source_materials/joint_vision_2020.pdf.

[72] Haynes, "American Naval Thinking in the Post-Cold War Era," 163, 175–76; *U.S. Department of Defense, Joint Vision 2010* (Washington, DC: U.S. Government Printing Office, 1996), 7, 19, http://www.dtic.mil/jv2010/jv2010.pdf.

[73] Haynes, "American Naval Thinking in the Post-Cold War Era," 133.

[74] Ibid., 137–38, 141, 145.

[75] Holloway III, *Aircraft Carriers at War*, 444.

Innovations in the Navy's arsenal meant that naval aviation could participate in more operations and provide a wider range of offensive capability. The advent of precision-guided munitions, the Navy's partnership with the Air Force, and incorporation of Tomahawk missiles on platforms like surface ships and submarines has increased the chance that COCOMs will ask for the Navy's help to achieve their objectives.[76] Captain Marty Erdossy, former commanding officer of the USS *George Washington* (CVN-73), believes that the national tasking on aircraft carriers provides the foundation to support large aircraft carrier numbers. The current congressionally mandated number of 11 allows the United States to deploy up to three carriers and maintain a surge capability for more carriers to support major operations. Six carriers deployed for the opening of Operation Iraqi Freedom (OIF). On a normal carrier cycle the Navy has "two deployed, one on its way, two underway for training, one in post deployment stand-down, two in-port for light maintenance/training, two in heavy maintenance and one in [refueling and over-haul] RCOH."[77] He adds that the need for carriers increased with the 2010 U.S. National Security Strategy's substantial emphasizes on the pivot to the Pacific and the Navy's current strategy, Cooperative Strategy for 21st Century Seapower (CS-21).[78]

In 2007 the Navy, in conjunction with the Marine Corps and Coast Guard, released CS-21 with great enthusiasm due to the extensive research that went into its development and its support for the 2005 *National Strategy for Maritime Security*, and the 2006 *Quadrennial Defense Review*. CS-21 emphasizes the six core capabilities of forward presence, deterrence, sea control, power projection, maritime security, and humanitarian assistance/disaster relief to achieve six key tasks. The tasks were to "limit regional conflict with forward deployed, decisive maritime power; deter major power wars; win our nation's wars; contribute to homeland defense in depth; foster and sustain cooperative relationships with more international parties; and prevent or contain local

76 Krepinevich, *Why Air-Sea Battle?*, 6–7.

77 Marty Erdossy, "Why Does the United States Only Have Eleven Aircraft Carriers?" *Forbes*, July 17, 2012, http://www.forbes.com/sites/quora/2012/07/17/why-does-the-united-states-only-have-eleven-aircraft-carriers/.

78 Ibid.

disruptions before they impact the global system."[79] CS-21 does not specifically discuss naval aviation, or any other weapon system, and it does not challenge the standing institutions in each of the three services. Instead CS-21 emphasized interagency and global cooperation to combat both conventional and irregular threats. Specific enemies go unlisted in the document, and critics claim CS-21 is more of a concept than a strategy document.[80] The Naval Aviation Enterprise produced *Naval Aviation Vision 2010* to state exactly how aircraft would assist in the completion of each of the six core capabilities.[81] Hence, CS-21, like the many strategies before it, did not attempt to off balance the Navy's states quo and naval aviation continued unaffected with once again established purposes. For naval strategy to damage naval aviation it would have had to promulgate strategic principles that naval aviation could not provide.[82]

As a result of the September 11, 2001, attacks CS-21 called for the Navy to increase its involvement in the home security and defense mission, and called for a defense in depth approach where the Navy combats threats from forward deployed locations and U.S. territorial waters. CS-21 supports the concept of maritime domain awareness (MDA), which attempts to link federal agencies with both classified and unclassified information data sharing and increased cooperation. To ensure that this teamwork approach works the U.S. government established the Maritime Operational Threat Response (MOTR), which delineates how the U.S. Navy will work with other federal agencies if requesting or responding to assistance. Consisting of a manned watch floor, MOTR attempts to address the difficulties of interagency collaboration.[83] This model has even emerged into a global idea to work with other allied nations. MOTR, however, does not assign command authority of one agency over another. The establishment of this concept means that naval aviation can provide assistance to other

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[79] Robert O. Work and Jan van Tol, *A Cooperative Strategy for 21st Century Seapower: An Assessment* (Washington, DC: Center for Strategic and Budgetary Assessments, 2008), 4.

[80] U.S. Navy, *A Cooperative Strategy for 21st Century Seapower* (Washington, DC: Government Printing Office, 2007), 4-5, 7, http://www.navy.mil/maritime/maritimestrategy.pdf.

[81] U.S. Navy, *Naval Aviation Vision 2010* (Washington, DC: GPO, 2007), 4, http://nae.ahf.nmci.navy.mil/downloads/NAV2010_15_NAE_sp.pdf.

[82] Work and van Tol, *A Cooperative Strategy for 21st Century Seapower*, 3–5;

[83] U.S. Navy, *A Cooperative Strategy for 21st Century Seapower*, 15–17.

agencies and participate in new types of missions. The system proved effective in the rescue operation of the crew from the *Maersk Alabama* when maritime patrol aircraft, P-3C Orion, provided 24-hour reconnaissance support for the task, and their live video streams gave decision makers constant situational awareness.[84]

2. Tactics

Another large support for naval aviation originated from the emergence of anti-access and area-denial (A2AD) fear as interest increased in littoral areas. CS-21 specifically mentions this threat.[85] The anxiety centers on an opponent's ability to limit air operations from fixed and maritime positions, cutting off freedom of movement and the Navy's power to respond to national tasking. Possible locations where this might occur are in the Persian and Arabian Gulf and the South China Sea. Specifically, China's conceivable aggression toward Taiwan vexes the United States. Over the years, China and Iran have increased their attempts to build effective A2AD mechanisms. With China's defense spending at approximately 150 billion a year, the Air Force and Navy decided to collaborate in the 2009 development of the Air-Sea Battle Concept (ASB), an idea modeled on the Air-Land Battle of the 1980s.[86] The concept's primary premise is to network and integrate joint capabilities to fight in all realms of combat (air, sea, land, subsurface, space, and cyber) and "attack-in depth" to overcome A2AD attempts.[87] Naval aviation plays critical roles in accomplishing the ASB mission because it is less likely that other nations will be as willing as they were in the Cold War to provide locations to support land based assets. Aircraft carriers can easily position themselves where needed and eliminate the need to maintain foreign bases.[88] China's military rise leaves others to

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84 Ivan T. Luke, *The Challenges of Maritime Homeland Security and Defense* (Newport, RI: Naval War College, January 2013), 3, 5–6, 8.

85 U.S. Navy, *A Cooperative Strategy for 21st Century Seapower*, 10.

86 Owen R. Cote Jr., "The Future of Naval Aviation," Massachusetts Institute of Technology Security Studies Program, 16, http://web.mit.edu/ssp/people/cote/MIT_SSP_FutureofNavalAviation.pdf

87 U.S. Department of Defense, *Air-Sea Battle: Service Collaboration to Address Anti-Access & Area Denial Challenges* (Washington, DC: Department of Defense, Government Printing Office, May 2013), 4, http://www.defense.gov/pubs/ASB-ConceptImplementation-Summary-May-2013.pdf.

88 Cote Jr., "The Future of Naval Aviation," 14–16; Krepinevich, *Why Air-Sea Battle?*, 1–2, 6–11; U.S. Department of Defense, Air-Sea Battle, 1–4.

argue that the threat extends beyond the littoral areas, and the United States may soon face an open ocean threat, which warrants a strong and capable force.[89]

D. THE INFLUENCE OF MODERNIZATION AND ADAPTATION EFFORTS SUPPORTING NAVAL AVIATION

The September 11, 2001, attacks provided the United States with a clear enemy and afforded naval aviation a chance to display its strong and improved strike capability. With a lack of land air bases in proximity to Afghanistan, naval aviation provided 75 percent of the strikes (4,900 in total) and air support in the first three months of Operation Enduring Freedom (OEF).[90] Attacking a land locked country hundreds of miles from the sea silenced many skeptics of naval aviation. By the time Operation Iraqi Freedom (OIF) commenced in 2003 naval aviation had demonstrated that it had improved its kinetic effectiveness from Gulf War deficiencies. Naval aviation gained praise from civilian and military leadership when it picked up the slack when weather prevented Air Force aircraft from supporting operations on a few occasions. In both wars six carriers surged to participate in the opening months, and displayed the utility of the carrier to conduct non-core missions, as when the USS *Kitty Hawk* (CV-63) became a Special Forces staging area in OEF.[91]

Naval aviation's ability to provide its praised support for OEF and OIF was the result of many hardware and practice improvements that occurred in the 1990s and early 2000s. New weapons like the Advanced Medium Range Air to Air Missile (AMRAAM) improved the capability of beyond visual range (BVR) air targeting, while the Low Altitude Navigation and Targeting Infrared for Night (LANTIRN) pod enhanced the ground attack capability of the F-14 Tomcat. In 1996, multiple aviation training and readiness commands combined to form the Naval Strike and Air Warfare Center (NSAWC) in Fallon, Nevada, which increased the standardization of tactics and techniques and further displayed the Navy's commitment to strike warfare. Improving the Joint Direct Attack Munitions (JDAM) and introducing the Joint Stand-Off Weapon

89 Cote Jr., "The Future of Naval Aviation," 16–17.

90 Lambeth, *American Air Power At the Dawn of A New Century*, 29.

91 Ibid., 9–10; *Holloway III, Aircraft Carriers at War*, 444–45.

(JSOW) and the Standoff Land Attack Missile-Expanded Response (SLAM-ER), meant that naval aircraft could increase its precision and effectiveness. Now naval aviation possessed the ability to attack in all weather types.[92] In response to the 2001 QDR requirement, the Navy created the Fleet Response Plan (FRP), which changed the deployment, training, and maintenance cycles for aircraft carriers, and provided the ability to have multiple carriers available for operations OEF and OIF. The FRP doubled the amount of carriers available for COCOM tasking.[93]

Adaptability in naval aviation also helped it stay relevant, especially in OEF and OIF. Much of this happened at the tactical level with junior operators taking the initiative. In one example the E-2C Hawkeye, which primarily delivers early air warning (AEW), air intercept control (AIC), and strike control, adjusted to fill gaps in the management for close air support and other new mission roles. Although an admiral approves the publication of Tactics Techniques and Procedures (TTP) and the TOPGUN manuals, which provide weapon system employment guidance, the majority of change submissions come from those gaining experience on the front lines. Other unclassified and classified community journals, such as the NSAWC journal, allow aviators a place to share their thoughts on improvements and experiences, which deploying units can utilize. Through practice, shared knowledge, and repetition naval aviation perfected the air kill chain in OEF and OIF.[94] Thomas Ehrhard and Robert Work equate naval aviation's success in improving range and sortie rates as one of the prominent steps that naval aviation took to increase its allure to civilian and military leadership.[95] In 2010, an air wing's ability could provide "1,080 aim points per day out to 200nm—nearly a seven-fold improvement over the 1989 air wing's precision strike power, and more than 1.5 times better than the 2001 CVW's."[96]

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92 King, *U.S. Naval Strategy in the 1990s*, 5–7; Cote Jr., "The Future of Naval Aviation," 53.

93 U.S. Navy, "Naval Transformation Roadmap," Fleet Response Plan, U.S. Navy, accessed December 14, 2013, http://www.navy.mil/navydata/transformation/trans-pg09.html; Lambeth, *American Air Power At the Dawn of A New Century*, 61, 66.

94 Lambeth, *American Air Power At the Dawn of A New Century*, 54–55; Cote Jr., "The Future of Naval Aviation," 53

95 Ehrhard and Work, *Range, Persistence, Stealth, and Networking*, 3–5, 99, 109–13.

96 Ibid., 110.

While OEF and OIF persisted naval aviation had to deal with the budgetary shift to other locations that fought the GWoT. As the insurgent campaign intensified the wars displayed, contrary to *Joint Vision 2010* and *2020* documents, that dominance and air power on the battlefield cannot win every war. Due to Defense Secretary Donald Rumsfeld's attempt to transition the entire military to match the post-Cold War environment, the Navy eliminated 50 programs and endeavored to transform its business practices.[97] It canceled the F-14 Tomcat and S-3 Viking to free up money for other programs and modernization efforts, and it established the Naval Aviation Enterprise (NAE) in efforts to reduce operating cost.[98] CNO Admiral Vern Clark placed emphasis on the ability of new programs to improve joint war fighting and permit growth in order to receive funding. Chairman of the Joint Chiefs Admiral Michael Mullen admitted that this created gaps in the Navy plan to recapitalize and modernize, and it hindered efforts for the Navy's strategy *Sea Power 21* goal of a 375-ship fleet. The Navy decommissioned the USS *John F. Kennedy* (CV-67) 12 years early in order to save 350 million in upkeep costs and 1.2 billion in operational costs.[99] Naval aviation gradually moved away from platforms that provided single purpose roles to those capable of accomplishing multiple missions and being easily upgraded, but these changes came at a high cost. The largest example is found in the Navy's pursuit of the F-35 Joint Strike Fighter (JSF), which has seen a 75 percent price increase since its initial 2001 estimate.[100]

Officially established in 2004, the NAE attempts to improve squadron readiness issues through a better distribution of resources between deployed and non-deployed units and reduce the cost of flight hours for 3800 naval aircraft.[101] It evolved from the findings of the Health of Naval Aviation (HONA) and Aviation Maintenance-Supply

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97 Hunter Keeter, "Mullen: Navy to Back Further Program Cuts, More Business Efficiencies," Defense Daily 17 (2003), http://www.navysna.org/newsgram/files/Press/MullenCuts_17JAN03.pdf

98 Ibid.; "The Naval Aviation Enterprise," Enterprise Framework, U.S. Navy, accessed November 26, 2013, http://www.cnaf.navy.mil/nae/.

99 Ehrhard and Work, *Range, Persistence, Stealth, and Networking*, 36.

100 Snodgrass, "Naval Aviation's Transition Starts with Why"; Caverley and Kapstein, "Arms Away, 1–3.

101 U.S. Navy, "History: An Overview," Naval Aviation Enterprise, U.S. Navy," accessed 23 January, 2014, http://nae.ahf.nmci.navy.mil/history.asp.

Review (AMSR) and the success of the Naval Aviation Production Process Improvement (NAPPI) program of 1998. NAE comprises three cross-functional teams (CFT) of subject matter experts: Current Readiness, Future Readiness, and Total Force. It has successfully reduced gaps in COCOM request and forces delivered, and it has reduced the cost through saved maintenance man-hours and consolation.[102]

E. BUREAUCRATIC SUPPORT FOR NAVAL AVIATION

The bureaucratic structure of the U.S. government and the U.S. Navy also provides backing to naval aviation. Chapter II examined how institutional interest for naval aviation originated and how the Navy sustained it over the years. In subsequent years this trend of commitment grew stronger, and aviation became the dominant piece of the U.S. Navy. In a perfect system the Navy's support for naval aviation, which the U.S. government backs, would result from thoughtful planning, threat analysis, strategic visions, and presidential policies. However, Mortin Halperin and Priscilla Clapp in *Bureaucratic Politics and Foreign Policy* propose that the Navy, as well as the other services, seeks policies that support the established institutional interest, which is set by a select group inside the organization and ingrained in the culture. Consequently, there exists the possibility for a weapon system to receive funding even when the strategic environment does not support it. According to their model, national interest can become confused with the pursuit of influence as the Navy fights for its portion of the national budget. Instead of strategic landscape defining what type of systems to fund to meet challenges, the select platform defines the threat.[103] Roger Barnett of the Naval War College believes that culture is the most important internal factor for the Navy in the development of strategy. He says that the Navy ensures that the characteristics of strategy remain broad enough were each of the three major communities of the Navy, surface, subsurface, and air, continue to receive support. One could say that this critical dilemma could invalidate a doctrine like CS-21, except the Navy followed the guidelines of the

[102] U.S. Navy, "History: An Overview, U.S. Navy, Naval Aviation Vision 2010," 107–11.

[103] Halperin, Clapp, and Kanter, *Bureaucratic Politics and Foreign Policy*, 25–27, 30, 38.

National Security Strategy, National Defense Strategy, QDR, and the National Military Strategy in the creation of CS-21, a system that flows from the President down.[104]

Various models conflict when trying to determine the true source of military transformation and where support for a particular weapon system originates. The theories of Barry Posen, Deborah Avant and Stephen Peter Rosen are some of the most well-known and put military leadership in competition with civilian leadership. Posen believes that political leaders push military innovation from the top down with nonconformists from within the military, and the motivation for change will develop from the need to counter a threat.[105] Although Posen developed his theory based on the interwar period between the World Wars it provides insight into a possible reason why naval aviation has gone largely unchanged. Naval aviation saw no one contest its capability since no other superpower emerged after the Soviet Union collapsed. Avant provides a counter argument. She states that policy set by civilian leadership is unable to make true changes in military doctrine. Military leaders will cooperate with civilian desires only when its increases their position. Civilian-led budgets restrain military ambitions and control activities more when a division exists in civilian leadership.[106] Rosen intermingles the two models and adds an extra element to the argument. He concludes that the ability to govern over officer promotions breeds power in the military. Rosen says that civilian leaders do not have control over innovation and that military leaders developed doctrine, but there exist different reasons why change occurs in peacetime and wartime environments. During peacetime, innovation has a greater possibly, and the push for it will come from military leaders. Civilians are viewed as outsiders and can serve a supporting role for the military member doing the change. Change will occur depending on how the international security environment is viewed. Wartime innovation will result from failure. Civilians do not decide on what technology to develop just which elements receive funding.[107]

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104 Roger Barnett, "Strategic Culture and its Relationship to Naval Strategy," *Naval War College Review* 60, no. 1 (Winter 2007): 25, www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA519527.

105 Posen, *The Sources of Military Doctrine*, 13, 17.

106 Avant, *Political Institutions and Military Change*, 74, 13031.

107 Rosen, *Winning the Next War*, 1, 20–21, 57, 255.

These three authors have differing views, but they all indicate that innovation in the military is difficult. The validly of these three theories depends on the strength of the leaders in place, both in the civilian and military. In the case of Admiral Radford, Captain Burke, and Admiral Griffen in 1949 they remained committed to their cause and overcame civilian attacks on naval aviation.

The strategic situation, as Rosen states, and the role of industry also provide input. Naval aviation receives a large amount of backing from a vast collection of powerful business and public interest groups, and they often provide financial backing to the legislators who support their interest. Not only do these groups influence the political dealings in Washington, they also impact the media, which informs and sways the public. For example, retaining a strong military capability to contest possible Iranian aggression is an agenda issue for one of the most powerful and donating groups, the American-Israel Public Affairs Committee (AIPAC), and naval aviation provides a large role in that mission.[108] The likely source of support for naval aviation comes through a combination of the efforts from the various power holders. Graham Allison and Morton Halperin's bureaucratic politics paradigm states that "multiple players holding different conceptions of the national interest struggle, compete, and bargain over the substance and conduct of policy."[109] The Navy likes to protect tradition, Congress seeks to protect its position in the government, and business protects their moneymaking systems.

The fight over the V-22 Osprey, which the Navy views as a possible replacement for the C-2 Greyhound, provides an interesting case for the bureaucratic disagreements that can occur over military equipment and how powerful money can be. The Osprey program started in 1982, and differences developed almost immediately between supporters and opponents. Military and civilians comprised both sides of the argument. In August 1992, the George H. W. Bush Administration decided to drop its blocking of the program as it felt resistance from Congress. With backing from the manufacturers and U.S. Marine Corps, Congress kept the project alive through its control over the budget.

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[108] Hastedt, *American Foreign Policy*, 118–20, 128–29; "Prevent Iranian Nuclear Weapons Capability," AIPAC, accessed February 4, 2014, http://www.aipac.org/learn/legislative-agenda/agenda-display?agendaid={E9465F79-9380-4A00-BAA9-18DB524F23C8}.

[109] Jones, "Roles, Politics, and the Survival of the V-22 Osprey," 363.

The manufacturers, Boeing and Bell Helicopter, subcontracted components of the aircraft to approximately 2000 companies in 40 states reaching a large pool of congressional constituents. Secretary of Defense Dick Cheney, with President Bush's support, had opposed the program in previous years. His office, in order to save money, proposed an improved helicopter, rather than the V-22, and in some fiscal years did not spend the allocated funds, almost resulting in a lawsuit from the Legislative Branch. The Marines publicly pursued the V-22, often contradicting the Defense Secretary. Congress cited the V-22s ability to improve economic conditions in the United States, make a strong commitment toward the Marines and military, as well as provide favorable implications for civilian aviation. Congress often kept funding even when the program received cancelation notices and the Office of the Security of Defense (OSD) deemed it an unneeded weapon system. President Bush denied that his decision to back down from the dispute came from the proximity of an election year and stated that his constitutional authority did not support obstruction of the program. However, he did order the Marines to cease their public campaign for the V-22. Congress' support pushed the program until the Osprey finally entered service in 2005.[110]

There are also examples where the bureaucratic structure of the U.S. Government prevented the Navy's attempt to cut unwanted systems. In 2009 Congress blocked the Navy's request for funding of Littoral Combat Ship (LSC) and insisted on the funding of guided missile destroyers the Navy did not request.[111] The Navy has tried to cut seven Arleigh Burke class destroyers every year since. The timing of the Navy's request often influences the outcome. During election years Congress is less likely to anger businesses with dramatic changes to the defense budget. The Navy's 2008 request to temporally drop to a 10-carrier fleet, while the USS *Gerald R. Ford* (CVN-78) was still under construction, did not get approved. However, the Navy's attempt the following year

110 Jones, "Roles, Politics, and the Survival of the V-22 Osprey," 362–63, 367–68, 370–71.

111 Sean Reilly, "Senate Bill Would Cut LCS Funding, Buy a Destroyer the Navy Didn't Ask For," *Huntsville Times*, September 12, 2009, http://blog.al.com/live/2009/09/senate_bill_cuts_lcs_funding_b.html.

proved successful.[112] Secretary of Defense Robert Gates failed in his fight with Congress to defund the alternate F-35 Lighting engine, reminiscent of the debate over the V-22 Osprey. In January 2014, the executive Branch resisted the Navy's effort to decommission the USS *George Washington* (CVN-73) half way through its lifespan. Although some speculate that the Navy's proposal was just a ploy to appear to be tough on fiscal cuts and it knew the Obama administration would not approve.[113]

If Rosen's calculations are correct, the nation should heed the warning and guarantee that it does not wait until military failure to adapt to the correct strategic setting. Naval aviation has seen much success, but since World War II America has been able to pick most of its battles. One could argue that the United States undertook many of these actions because of the capability it possessed. The air campaigns over Libya and Bosnia serve as great examples. What types of battles did the nation not fight because resources were tied up in the supported weapon systems? What types of battles is the United States Navy unprepared for? The answers may very well be none. However, it is still important to ensure that an unbiased collaborative effort exists between both civilian and military institutions to determine the tools needed for the security environment. In the politics of Washington this task is easier said than done.

F. THE UNTIED STATES USE OF THE MILITARY IN FOREIGN AFFAIRS

The United States uses economic, diplomatic, and military instruments in foreign affairs, and there are many societal and institutional environment components in the United States that constrain and influence U.S. leadership in their national security policy decisions. Factors from the societal environment sway how the people of the United States view themselves and what values they stand for. Elements such as capitalism, religion, historical roles, philosophies, and difference of opinion over isolationism influence customs and national beliefs. A common goal among Americans is for the United States to remain the world's only superpower. Meanwhile, the institutional

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[112] Christopher P. Cavas, "Carrier Cut Could Be Back on Table," *Defense News*, January 26, 2014, http://www.defensenews.com/article/20140126/DEFREG02/301270019/Carrier-Cut-Could-Back-Table.

[113] "White House Pushing against Proposed Pentagon Carrier Cut," *USNI News*, January 30, 2014, http://news.usni.org/2014/01/30/white-house-pushing-proposed-pentagon-carrier-cut.

environment places constraints and counterbalances on the various components of the government and determines how the structure of the U.S. bureaucracy shapes foreign policy. Some of the largest factors that influence foreign affairs are Congress' willingness to contest or agree with the executive branch and the president's use of executive power.[114] Policy makers rely on guidance established by traditions to deal with threats and determine the course of their policies. Politicians often enter office with many of these shaping concepts previously ingrained into their convictions. Both societal and institutional environmental factors affect the choices made in favor or against naval aviation. Using the military or displaying a strong defensive capability can resolve issues quickly and decisively state U.S. intentions for the world to comprehend. Over the last seven and a half decades aircraft carriers played a major role in both tasks, and naval aviation provided a critical role in supporting the nation's worldwide commitment to allies, peace enforcement, freedom of navigation, and trade protection.[115]

Much of the interaction that America has with the world and the effort it puts into combating threats depends on the mentality that it choices to take. Presidential policies play an enormous role in shaping the path in foreign affairs, as does the American psyche. The budget crisis and exhaustion from fighting two protracted wars in Iraq and Afghanistan has brought many to question the current forward presence mentality of the U.S. foreign policy Barry Posen advocates for a reduction in the United States' commitment around the world. Like many others he believes that the strong military presence has made other countries dependent on America's power and created as many enemies as it has successfully resolved situations. Instead of relying on the natural protection that the Atlantic and Pacific Oceans provide, the miniscule threat that Canada and Mexico pose, and nuclear weapons, America has decided to retain a "militarized and

114 Hastedt, *American Foreign Policy*, 57–60.

115 James M. McCormick, ed., *The Domestic Sources of American Foreign Policy: Insights and Evidence*, 6th ed. (Lanham, MD: Rowman & Littlefield, 2012), 11–16; Joseph S. Nye Jr., "The Future of American Power: Dominance and Decline in Perspective," McCormick, *The Domestic Sources of American Foreign Policy*, 35.

forward-leaning foreign policy."[116] The result has brought diplomatic soft balancing, the attention of terrorist groups, the creation of alliance against America, and the proliferation of weapons technologies from countries like China and Russia to smaller nations trying to fill the gap in capability with the United States. Moreover, the United States often involves itself in crisis that have nothing to do with America's national security. A military scale down would save capital and possibly put the United States in a more advantageous position in the world.[117] The Cato Institute estimates that a savings of $900 billion could result from a ten-year major reduction in military capability and posture. Posen does not believe in a full pull back of forces. Instead he calls for a reexamination of America's commitments.[118]

Others propose for the continuation of substantial forward engagement and maintenance of the strong defense relationships the United States has with partner nations spread all over the globe. Every administration since World War II supported engagement through economic, diplomatic, and military means under the belief that maintaining ties, balances potential opponents. Authors Stephen Brooks, John Ikenberry and William Wohlforth argue that the primary objective in the United States strong defensive posture after the Soviet Union's collapse is to secure regional stability. Efforts to restructure of the defense budget are already underway with the goal of decreasing defense spending within the U.S. budget from 4.5 percent to 3 percent by 2017.[119] Brooks, Ikenberry and Wohlforth disagree with Posen stating that little evidence exists of anti-American coalitions. Instead, they argue that alliances strengthen the country, avoid wars, and deter potential opponent's ambitions. Without these alliances and preservation of commitments, Asia, the Middle East, and possible Europe would destabilization. Countries that benefit from extended deterrence would likely develop nuclear arsenals

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116 Posen, "Pull Back: The Case for a Less Activist Foreign Policy," *Foreign Affairs* 92, no.1 (2013) 118, http://search.proquest.com/docview/1269079433?accountid=12702; Hastedt, *American Foreign Policy*, 352.

117 Posen, "Pull Back," 116–128.

118 Stephen Brooks, G. John Ikenberry, and William C. Wohlforth, "Lean Forward: In Defense of American Engagement," *Foreign Affairs* 92, no. 1 (2013): 132, http://search.proquest.com/docview/1269079541?accountid=12702.

119 Ibid., 133.

and sea-lanes used for shipping might become jeopardized. America's military presence ensures the establishment and continuation of free trade agreements with countries like South Korea. Because of America's strength, which naval aviation provides a large portion of, the world is a safer place, and America's economy flourishes. The authors are not blind to the monetary burden of a robust military and see the reduction in defense spending since 1991 as a positive. They also believe in rebalancing, but not abandonment to the worldwide commitment the United States has made.[120]

Under President Obama's administration the United States remains committed to interaction with the world and maintenance to America's commitments, and the military and naval aviation routinely play a major tool in foreign affairs. For now, only a minority of political leaders believes in an abandonment of these pledges or a move in line with Posen's theories, and the military's most expensive tool, aircraft carriers, receives the support it needs to continue.

G. CONCLUSIONS

As the Navy devotes 8.7 percent of its 156 billion dollar budget on the construction of the USS *Gerald R. Ford* (CVN-78), its commitment to naval aviation is well displayed.[121] Institutionally naval aviation has played an integral part of the Navy since World War II, and its ability to project power for strike warfare and A2AD missions assists in it receiving continued support. The adaptability of naval aviation's members to accomplishing mission tasking, and the Navy's commitment to constantly upgrading its systems and technologies has resulted in naval aviation outpacing potential enemy capability for many years. As the defense budget continues to receive increased scrutiny, unmanned systems advance in capability, and anti-aircraft carrier weaponry improves it is likely that naval aviation will continue to undergo dramatic changes. A serious reduction in naval aviation would go against the current bureaucratic structure of the government, deal a large blow to businesses, and hinder the COCOMs ability to meet

120 Brooks, Ikenberry, and Wohlforth, "Lean Forward," 130–142.

121 J. Noel Williams and Henry J. Hendrix and, "Twilight of the $UPERfluous Carrier," *United States Naval Institute Proceedings* 137, no. 5 (2011), http://www.usni.org/magazines/proceedings/2011-05/twilight-uperfluous-carrier.

the strategic defensive guidance as it is written today. The future of naval aviation depends on the decisions made over issues that jeopardize its ability to continue to meet the security needs of the United States.

IV. ISSUES THAT JEOPARDIZE NAVAL AVIATION

A. INTRODUCTION

Although specific aircraft systems have issues within naval aviation this chapter will focus on those dealing with the aircraft carrier, because the condition and health of the carrier fleet affects the majority of naval aviation. In an opinion paper arguing against the reduction of naval aviation Rear Admiral Michael Manazir wrote, "The aircraft carrier … and its embarked air wing remain arguably the most valuable and effective instrument for shaping the national military strategy, with proven applicability from humanitarian assistance and disaster relief to high-end maritime strike warfare."[122] His statement is part of an ongoing debate concerning the current status of naval aviation where critics cite the cost of the carrier fleet, force composition, alternatives, utility, and vulnerabilities as reasons to invest in other technologies or decrease carrier numbers. Arguments over the Navy's carrier structure are not the only difficulties that jeopardize the future of naval aviation. Manning, cultural attacks, non-standard tasks, core missions also effect aircraft carriers and bring many to question if the nation uses and operates the carrier force effectively. While some operational tempo and capability changes would increase efficiency, aircraft carriers provide the United States with a strong, creditable ability to accomplish America's worldwide commitment and conduct contingency operations, and naval aviation possesses advantages that other technologies do not.

B. NAVAL AVIATION'S BUDGETARY AND POLITICAL CHALLENGES

Aircraft carriers cost more than just the initial $13 billion construction price. The support equipment, Air Wing, and vessels required to protect one carrier total approximately $50 billion.[123] Subsequently, the United States pays 6.5 million dollars per day to operate a single CSG.[124] To facilitate the enormous operational demands of aircraft

122 Michael Manazir, "Opinion: Preserve the Carrier Force," *USNI News*, February 10, 2014, http://news.usni.org/2014/02/10/opinion-dont-short-carrier-force.

123 L. R. Jones and Jerry L. McCaffery, *Budgeting, Financial Management, and Acquisition Reform in the U.S. Department of Defense* (Charlotte, NC: Information Age Publishing, 2007), 1.

124 Hendrix, *At What Cost a Carrier?*, 5.

carriers the Navy dedicates 46 percent of all naval personnel to support them.[125] Costs have risen over the years. For example the construction price of the USS *Nimitz* (CVN-68) in 1976 ran $950 million, which represented 4.5 percent of the Navy's $21 billion dollar annual budget. The USS *Gerald R. Ford* (CVN-78) will consume an estimated 12.5 billion, which is 8.7 percent of the Navy's 156 billion dollar budget.[126] These facts bring an increased level of scrutiny from critics, especially in times when defense spending is under fire. The resulting political fight affects the Navy's ability to effectively operate.

The hefty budgetary support that the Defense Department received during OEF and OIF has come to a close, and the new round of reductions can have negative effects on the Navy's capability, including naval aviation. The Budget Control Act of 2011 elevated the search for military wide spending cuts, and the Navy has taken reductions in all of its communities.[127] From the surface fleet the Navy removed 11 cruisers from deployment cycles for modernization efforts after Congress blocked decommissioning plans. Budgetary adjustments also abbreviated the purchase of Littoral Combat Ships (LCS) from 52 to 32 vessels, and a two-year delay for the F-35 is still on the discussion table.[128] One of the principle budgetary hardships for the Navy is the sequestration. Chief of Naval Operations Admiral Jonathan Greenert remarked that cuts to ships and aircraft numbers and training would continue unless Congress ends the sequestration. Normally, three CSGs and three Expeditionary Strike Groups (ESG) can surge deploy with only a weeks' notice, but the sequestration lowered that number to one apiece.[129] Defense Secretary Chuck Hagel's attempt to cut Navy resources came under intense scrutiny from the Legislative Branch. Congress's willingness to approve cuts lowers during an election

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125 Robert C. Rubel, "The Future of Aircraft Carriers," *Naval War College Review* 64, no.4 (Autumn 2011): 13, https://www.usnwc.edu/getattachment/87bcd2ff-c7b6-4715-b2ed-05df6e416b3b/The-Future-of-Aircraft-Carriers.

126 Williams and Hendrix, "Twilight of the $UPERfluous Carrier."

127 Majumdar, Dave. "Hagel: Navy to Lay Up 11 Cruisers, Carrier Cut Decision Delayed until 2016 Budget, " *USNI News*, February 24, 2014, http://news.usni.org/2014/02/24/hagel-navy-lay-11-cruisers-carrier-cut-decision-delayed-2016-budget.

128 Ibid.

129 Fabey, "Greenert Details Potential Fiscal 2014 Aircraft, Ship Cuts."

year as representatives become sensitive to the negative voting implications from defense businesses and interest groups, just as seen in the case of the V-22 Osprey.

1. Reductions or Elimination of the Carrier Fleet

One of the primary methods some civilian and military policy makers propose to shrink the Navy's budget is through a reduction or elimination of the carrier fleet. A complete elimination of the carrier fleet would require a major legislative re haul, but if the sequestration continues, the plan is to defund the nuclear refueling of the USS *George Washington* (CVN-73). The DOD delayed the decision until the 2016 budget after Congress reacted negatively to the proposition to cut the carrier early.[130] Once again an electron year may have kept the Navy from suffering an early negative verdict. The Navy did endorse the elimination, but Julian Barnes of the *Wall Street Journal* believes that the Navy may have been trying to appear tough on spending cuts while knowing that Congress would not support the effort.[131] If true, actions like these could prove risky, as the Legislative Branch has conceded power at times to the Executive Branch. Although, if a reduction decision occurred interest groups would contest the president just as hard as they would Congress. Critics of the current carrier fleet state that the United States could decommission two carriers and still have more than the combined seven other nations that maintain a carrier. Four Washington based think tanks propose that supporting an enhanced submarine fleet can meet the nation's strategic interest better.[132] At a February 2014 speech Vice CNO Mark Ferguson noted that the top budgetary priority would transition in the coming years from the revitalization of naval aviation to the replacement for the Ohio Class nuclear ballistic submarine (SSBN-X).[133]

Serious negative effects might occur from a reduction in carrier numbers, mainly operational tempo (OPTEMPO). Without a change in national will, worldwide

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130 U.S. Department of Defense, *Quadrennial Defense Review* (Washington, DC: GPO, 2014), 30, http://www.defense.gov/pubs/2014_Quadrennial_Defense_Review.pdf.

131 Julian E. Barnes, "Pentagon Drops Plan to Mothball a Carrier," *Wall Street Journal*, February 7, 2014, http://search.proquest.com/docview/1495450946?accountid=12702.

132 Ibid.

133 Mark Ferguson, "Address to Naval Post Graduate School" (speech, Monterey, CA, February 12, 2014).

commitment COCOM requirements, and doctrine, deployment times would have to increase for the remaining vessels. Increased deployment times elevate crew risks and morale and impact retention rates in some of the most critical occupations.[134] In one example, Deputy Chief of Naval Operations (Manpower, Personnel, Training and Education) Vice Admiral William Moran expressed concern after the USS *Carl Vinson* (CVN-70) conducted two back-to-back lengthy deployments with only five and a half months in-between, leading to a zero retention rate in the reactor department officer wardroom, a department requiring expensive specialized training.[135] The USS *Carl Vinson* (CVN-70) is not alone. 2012 marked the busiest year for OPTEMPO in the U.S. Navy.[136] If the Navy loses the USS *George Washington* (CVN-73) to sequestration, when it is scheduled to come back online, in 2021, the remaining ten ships will have to conduct nine or ten-month deployments. RCOH will take another carrier out of the deployment cycle for up to 44 months. Commander U.S. Fleet Forces Admiral William Gortney said, "I think eight months is the ragged edge of what sailors and families will be able to hold onto."[137] With the deployment cycle of an 11-carrier fleet already negatively affecting retention rates a reduction would make matters worse. Air wing and surface training and maintenance cycles require time in-between deployments to maintain combat effectiveness. Air wings can only accomplish some specialized training at facilities in the United States, like the Fallon Nevada Range. Since 1991 the number of carriers required by Congress for Major Combat Operations (MCOs) has fallen from 15 to 12 to 11 and now 10 until USS *Gerald R. Ford* (CVN-78) is online. This reduction is done to save money, taking a risk that many military leaders believe is not worth taking. When compiling long deployments with assaults on pay and benefits, a zero defect

134 Guy Snodgrass, "Keep a Weather Eye on the Horizon: A Navy Officer Retention Study," *U.S. Naval Institute Blog*, March 20, 2014, http://blog.usni.org/2014/03/20/keep-a-weather-eye-on-the-horizon-a-navy-officer-retention-study.

135 William Moran, "Address to Naval Post Graduate School" (speech, Monterey, CA, November 20, 2013)

136 Snodgrass, "Keep a Weather Eye on the Horizon."

137 Sam LaGrone, "WEST: Cutting Carriers Will Put More Stress on Sailors," *USNI News*, February 13, 2014, http://news.usni.org/2014/02/13/west-cutting-carriers-will-put-stress-sailors;

mentality, unknown schedules, constant material and money disputes, and a recovering economy and airline industry, the Navy stands the chance of losing many of its highly trained/experienced warfighters.[138]

In response to the current problem of extended deployments the Navy developed a 36 month Optimized Fleet Response Plan (O-FRP). It attempts to establish one eight-month deployment schedule with the goal of increasing Navy personnel's home time from 49 percent to 68 percent.[139] The O-FRP also attempts to increase predictability over readiness and deployment cycles and train the carrier's components (air wing, carrier, and surface escorts) to one combined and coordinated standard. Critics argue, however, that a guaranteed eight-month deployment followed by a 14 months window in which a CSG can surge (and if the past decade is a measure, it will) will not solve any of the Navy's issues and appears to be a continuation of an high OPTEMPO that will negatively affect retention in the most highly qualified individuals.[140]

Some military commanders voice concern over the ability of 11 aircraft carriers to accomplish the nation's worldwide tasking, and a reduction would only complicate matters. Commander, U.S. Pacific Command Admiral Samuel Locklear expressed his anxieties to the House Armed Services Committee that CENTCOM and PACCOM have difficulty meeting strategic requirements now and cannot afford an even greater loss. He cited the possibility of contingencies on and in the Korean Peninsula, the South China Sea, and the Philippines as reasons to support the fleet. Many operational plans (OPLAN) utilize the aircraft carrier in critical roles. He believes that the quick response surge capability will diminish even greater with more cuts.[141] Up to six carriers, including many that surged, deployed to support the opening strikes in Afghanistan and Iraq. To lighten the Navy's load the United States could increase cooperation with allied nations

138 Snodgrass, "Keep a Weather Eye on the Horizon."

139 "Document: The Navy's New Deployment Plan," *USNI News*, January 23, 2014, http://news.usni.org/2014/01/24/document-navys-new-deployment-plan; Snodgrass, "Keep a Weather Eye on the Horizon."

140 Snodgrass, "Keep a Weather Eye on the Horizon."

141 John Grady, "U.S. Pacific Commander Defends 11 Carrier Navy," *USNI News*, March 6, 2014, http://news.usni.org/2014/03/06/u-s-pacific-commander-defends-11-carrier-navy.

and more evenly divide responsibilities between militaries. The 2014 QDR mentions efforts to assist the United Kingdom in the rekindling of it carrier program.[142] Getting allied countries, which routinely freeload on U.S. defense, to take a more equal role in regional protection might be a difficult task, and many U.S. Citizens and representatives may not like the idea of our security being in the hands of other nations.

2. Manning and Bureaucracy Issues

Attempts to reduce the cost of the carrier fleet do not always target the vessels. For years the Navy has operated with reduced manning, expecting the remaining personnel to pick up the slack. To retain its high deployment rate the Navy had to change the fleet response plan (FRP) and personal tempo (PERSTEMPO) requirements and doubled the amount of forward deployed forces.[143] With the budget crisis, force management tools like Perform to Serve (PTS), and sequestration targeting manning, the problem could get worse. With the drawdown of OEF and OIF there is some relief as the over 11,000 sailors supporting those operations in augmentee roles rejoin their units. Manning shortages influence a CSG's ability to conduct operational tasking effectively and safely.[144]

Not all political influences that hurt naval aviation relate to the budget. Some legislative members and the growing bureaucracy of the Navy have changed the culture, reporting requirements, and responsibilities of naval aviation thus affecting the combat effectiveness of a CVW. Former Secretary of Navy John Lehman sees the disciplinary investigation that resulted from the 1991 Tailhook conference, led by Patricia Schroeder (D-CO), as the major catalyst for a deterioration of the culture of naval aviation. The inquiry cost 300 carrier aviators their jobs, and many lost their career for only attending.[145] He views the lessons passed down from mishaps, mistakes, and flying and combat experience as a major building block of warfighting skills. Officer's Clubs

142 U.S. Department of Defense, *Quadrennial Defense Review*, 24.

143 Whiteneck et al., *The Navy at a Tipping Point*, 7.

144 Cropsey, "The U.S. Navy In Distress," 35.

145 Lehman, "Is Naval Aviation Culture Dead?"

around the world provided junior officers a relaxed environment to learn from the proficiency of older generations. Many of these clubs have now closed with attempts to de-glamorization the use of alcohol and from the fears of officers having to always watch what they say and do as a zero-tolerance for mistakes mentality spread throughout the military. Although, positive effects emerged with decreased DUI and alcoholism rates, officers today can expect to lose their careers for making one mistake on or off duty. When this occurs the Navy loses a highly qualified officer that it invested millions to train. One of the Navy's greatest leaders Admiral Chester Nimitz grounded a squadron of destroyers and did not lose his job because his chain of command protected him. Currently, senior officers have little leeway to afford such help, and if this incident occurred today Admiral Nimitz would likely find himself on the front cover of the *Navy Times*. Secretary Lehman also argues that pointless paperwork has led to decreased job satisfaction, which pushes out some of the most talented aviators and increases procurement time for new platforms. In the 1950s the Navy successfully deployed the Polaris Missile submarine from initial concept in four years. Today the Navy projects the F-35 Lighting will take 24 years to reach the fleet. Other problems, such as the DOD's mounting bureaucratic responsibilities, increased the number of administrative jobs from 50 billets in 1947 to 750,000 today; the military created 250 new Joint Task Force billets to support the Goldwater-Nichols Act of 1986's requirement of joint staff duty.[146] A squadron must produce 780 different reports to the pentagon annually to feed the establishment, which takes time away from combat training.[147] There are efforts to reverse the paperwork drill. In one example the DOD recently requested that Congress eliminate the need for yearly long-term aircraft procurement plans and only require it every four years. The Fy-12 aircraft plan cost $440,056 to produce. The QDR, annual budget, and routine testimonies to Congress state most of the military's goals, thus

[146] Lehman, "Is Naval Aviation Culture Dead?"

[147] Ibid.

making the yearly procurement plan one of many redundancies.[148] Combined, these issues slowly chip away at the skills, health, and morale of a carrier force.

3. Adjusting Carrier Procurement Cycles

Efforts to save money in aircraft carriers have also pushed leadership to adjust how the Navy buys new equipment through a purchasing phase increase. One RAND Corporation's report examines the long-term effects on the construction of aircraft carriers if a proposed Navy procurement plan changes from a four to a five-year cycle. Its findings indicate that on a five-year cycle the Navy will have only 10 carriers by 2040.[149] If the current MCO remains at 11 carriers, the Navy will not have enough to support forward presence goals. Adjusting the schedules could also increase the cost for future carriers CVN-79 and CVN-80 up to 15 percent, decrease shipyard work demand, and increase RCOH as much as six percent.[150]

Another RAND team suggests an expedited replacement schedule of USS *Nimitz* class carriers with the USS *Gerald R. Ford* class could bring down the operational cost of maintain a CSG and provide 30 percent increase in capability to the Navy.[151] Under the Navy's current plans half of the carrier fleet will consist of aging Nimitz class carriers in 2035. These older systems use 46-year-old technology and require an expensive three-year RCOH after 23 years. While many improvements, such as a bulbous bow on the USS *Ronald Reagan* (CVN-76), benefit flight operations, *Ford* class carriers reduce personnel and maintenance requirements thus promoting a lower operating cost through improved propulsion, enhanced munitions handling, and transformed hydraulic systems to electromagnetic technology.[152]

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148 "DOD Asks for Relief from Annual Long-Range Aircraft Procurement Plans," Defense Alert, Inside Defense, last updated May 11, 2011, http://insidedefense.com.libproxy.nps.edu/201105112363577/Inside-Defense-Daily-News/DefenseAlert/dod-asks-for-relief-from-annual-long-range-aircraft-procurement-plans/menu-id-61.html.

149 Schank et al., *Changing Aircraft Carrier Procurement Schedules*, xi–xii, xv, 31–32.

150 Ibid., xv, 31–32,

151 Brien Alkire et al., M*odernizing the U.S. Aircraft Carrier Fleet: Accelerating CVN 21 Production Versus Mid-Life Refueling* (Santa Monica: RAND, 2005), xix.

152 Ibid., xiii, xix, 75.

C. CHALLENGES POSED TO AIRCRAFT CARRIERS BY OTHER U.S. WEAPONS

1. Utilize Smaller Carriers

Naval aviation's reluctance to use less expensive smaller carriers presents another debate that threatens the large deck super carrier fleet. Naval aviation moved away from escort carriers in the early stages of the Cold War due to threats from Soviet Union submarines.[153] U.S. Marine Corps aviation does use 11 smaller, 40,000-ton amphibious assault carriers, which the Navy operates for them. These carriers carry a significantly reduced aircraft inventory, but they only cost $2 to $3.4 billion apiece, depending on the variant.[154] The newest USS *America* class will increase the aircraft capability slightly with the arrival of the F-35B JSF short take-off vertical landing (STOVL). The obvious advantages of smaller carriers is the ability of the United States to either build more for the same cost as one larger carrier, or have a few fulfill gaps if the Navy decreases its mandate of 11 super carriers. Some claim that with increase in technology, such with the growth of unmanned systems and more capable manned airframes, smaller carriers will provide the strategic air power at sea needs that the nation requires. Having multiple carriers in different locations appears appealing in scenarios like war with China or if multiple contingencies erupt in geographically separated areas.[155]

However, the use of smaller carriers for naval aviation does not support current naval doctrine. For a 40,000-ton carrier to properly meet worldwide COCOM requirements aircraft technology must increase dramatically to the level of the capabilities of a super carrier, as well as make up for the limited amount of aircraft. The advantage that the F-35B JSF STOVL, which the Marine Corps will operate from smaller carriers, produces with increased stealth, link, and detection makes it a more proficient fighter but not enough for a doctrinal change.[156] Range and weight restrictions are only a few of the issues. An air wing's composition includes more than just strike fighters and a

153 Winton, Air Power at Sea, 63.

154 David Axe, "America's Third Air Force: Future of the Marines," *Breaking Defense,* June 17, 2011, http://breakingdefense.com/2011/06/americas-third-air-force-future-of-the-marines/.

155 Ibid.

156 Rubel, "The Future of Aircraft Carriers," 20–21.

CVW works as a team. The E-2C Hawkeye provides AEW and command and control, and either the EA-6B Prowler or the EA-18G Growler provide electronic attack and support; both aircraft require large deck carriers for operation. While unmanned systems may one day provide these functions, the technology is in its infancy. Big deck carriers also provide more flexible choices in flight operations. Some aircraft undergo maintenance in the hanger bay, some prep for missions or rearmament, while others conduct flight operations at the same time. To accomplish the Navy's core mission of strike warfare, it takes a lot of aircraft to execute a sustained mission presence over an area. One carrier normally conducts cyclic flight operations for 12 hours, launching approximately 120 sorties executing a wide range of missions. Navy aircraft flew 400 miles inland from the Arabian Sea before reaching the combat zone to participate in OEF and could only accomplish this task with a steady stream of planes. The use of two small MHS *Invincible* class carriers hindered the amount of tasks that 28 VSTOL British AV-8 Harriers could conduct in Falkland Island war, and a lack of AEW aircraft limited the AV-8 tactics and provided the Argentinian air force an advantage attacking British vessels with Exocet missiles.[157] Finally, smaller carriers face the same adversarial challenges that larger carriers do, as any type of surface carrier has a large radar cross section. Tactics and doctrine should not focus on having the ability to lose more aircraft carriers because the nation can produce more numbers. That advantage fails if a potential enemy produces a large amount of anti-ship missiles. Viewing smaller aircraft carriers as an alternative for super carriers suffers from deficiencies in limited aircraft and capability.[158]

2. Drones

The increase in drone technology gives the utility of aircraft carriers a possible challenge, and proponents of unmanned systems see long-range aircraft conducting

[157] John R. Harvey, "Regional Ballistic Missiles and Advanced Strike Aircraft: Comparing Military Effectiveness," *International Security* 17, no. 2 (1992): 55–57, http://muse.jhu.edu/journals/international_security/v017/17.2.harvey.pdf.

[158] Rubel, "The Future of Aircraft Carriers," 14.

national tasking from land bases in the United States or in allied countries.[159] While the technology incorporated in drones might grow to levels needed to accomplish this task, it is not there yet. Today drones are plagued with high crash rates, vulnerabilities from threats, requirements for clear airspace, and data connection issues, which jamming can sever. If the United States builds drones to conduct strikes autonomously a Tomahawk missile might provide a cheaper option. Missions could have devastating consequences if a scrubbed mission occurs due to a loss in data link, although, a human pilot might be as susceptible in the same instances. The cost of operating drones, compared to conventional aircraft, is not as beneficial as many think. Large support staffs and accidents are a few of the factors that drive up the cost. Also, the advantages that drones provide the United States in the war on terrorism against third world groups, are not likely to be as successful against more advanced foes. Moreover, others fear that the diminished repercussions, for no friendly pilot life is at stake, that a drone strike provides will make intervention too easily acceptable. The United States might more often involve itself in conflicts that result in blowback. The United States domination over drone technology will not last forever, and the proliferation of knowledge and equipment has already started to increase. Iran appears to have gained many details from crashed U.S. equipment. For now the Navy's focus is to incorporate drones into the CVW, like the X-47B Unmanned Combat Air System (UCLASS).[160]

3. Submarines and Tomahawk Land Attack Missiles

The U.S. submarine fleet and Tomahawk Land Attack Missiles (TLAMs) provide the United States with an enormous advantage over potential adversaries. In the opinion of Captain Henry Hendrix, who provides one of the most recent, well known arguments against aircraft carriers in his publication *At What Cost a Carrier*, and Dean of Naval Warfare Studies at the Naval War College Robert Rubel, these weapons offer a better

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159 Daniel Byman, "Why Drones Work: The Case for Washington's Weapon of Choice," *Foreign Affairs* 92, no. 4 (2013): 36–37, http://search.proquest.com/docview/1411622851?accountid=12702.

160 Audrey Kurth Cronin, "Why Drones Fail: When Tactics Drive Strategy," *Foreign Affairs* 92, no. 4 (2013): 48, http://search.proquest.com/docview/1411622618?accountid=12702; Robbin Laird and Ed Timperlake, "The Ford-Class Carrier, The F-35C and 'Spider Web' War At Sea," Breaking Defense, May 15, 2013, http://breakingdefense.com/2013/05/navy-the-f-35c-the-ford-class-carrier-spider-web-war-at-sea/.

investment for America than naval aviation does both in monetary and utility terms. A submarine's great advantage lies in its stealth capability and not many countries have the ability to detect U.S. submarines. The USS *Virginia* Class submarine and converted USS *Ohio* Class Cruise Missile Submarines (SSGNs) have a substantial strike capability with the incorporation of TLAMs and their traditional ability to attack surface and other subsurface targets.[161] At approximately $2 million apiece and a range of roughly 900nm, TLAMs can safely deliver munitions without risking a pilot's life.[162] The newest Block IV Tomahawk missiles even have the ability to loiter over an area awaiting call down, relay imagery back to commanders, and store 15 preprogramed targets or accept a new GPS target via satellite data.[163] According to Captain Hendrix, the 33 percent sortie increase rate advantage that the USS *Gerald R. Ford* (CVN-78) provides is not worth the 94 percent increase in cost.[164] He calculates that only 20 percent of a $120 million F-18 Hornet's airframe life will be spent in a combat zone. Using unclassified data to build his case, he estimates that 16,000 air to ground weapons were used in the Afghanistan and Iraq wars by Navy fighters, which equates to each aircraft only dropping 16 weapons.[165] In this case Tomahawks would be advantageous in monetary terms. He does acknowledges the need for man pilots for close air support, but believes that the military could develop cheaper means could handle most targets.[166]

However, submarines and TLAMs, which surface vessels can also launch, cannot accomplish all of the mission set of naval aircraft, such as the ability to conduct and provide consistent reliable close air support, interdiction, many forms of visual identification, combat search and rescue (CSAR), surface search, enhanced airborne

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161 Harry Kazianis, "Is AirSea Battle Obsolete?" *The Diplomat*, June 21, 2012, http://thediplomat.com/2012/06/is-airsea-battle-obsolete/; Rubel, "The Navy's Changing Force Paradigm," 17-18, 22.

162 "Tomahawk," Naval Air Systems Command, U.S. Navy, accessed March 26, 2014, http://www.navair.navy.mil/index.cfm?fuseaction=home.display&key=F4E98B0F-33F5-413B-9FAE-8B8F7C5F0766.

163 Ibid.

164 Hendrix, *At What Cost a Carrier*?, 6.

165 Ibid., 7.

166 Ibid., 3.

intelligence surveillance and reconnaissance, humanitarian assistance, deep inland attack aided by air refueling and detachment locations, and continued mission support when data links are severed. Deterrence is also one of the largest missions that aircraft carriers perform, and stealthy submarines prefer to remain undetected. Like Taiwan in 1996, the United States has avoided many conflicts by parking an aircraft carrier off a potential adversary's coast. In addition, just because adversarial ASW capability is currently not strong does not mean that countries will not invest great efforts to negate the U.S. submarine advantage.

D. CHALLENGES POSED BY ADVERSARIES' CAPABILITY

Budgetary constraints, political wrangling, and the threat of elimination from other U.S. assets are not the only problems that vex the future of the carrier fleet. For decades aircraft carriers have operated freely offshore from warzones with limited fear of attack to the actual vessel. CSGs have not taking these advantages for granted and the Navy devotes money, manpower, and time to provide advanced ship defense, radar, and early warning aircraft. It also conducts pre deployment exercises to prepare crews for worse case scenarios, like under sea warfare exercises (USWEX) that improve ASW fortification. However, many view the advances in adversarial technology as proficient carrier killers, and they call for an investment in other military equipment.

1. Contested Operational Areas and Carrier Limitations

In Captain Hendrix's opinion improvements in anti-ship and aircraft missile technology, like the Chinese built DF-21D that has a range twice that of current carrier aircraft, and investments in quiet diesel submarines make the U.S. Navy's aircraft carrier fleet unable to operate in a contested environment and otherwise irrelevant. Although Captain Hendrix acknowledges the diplomatic power that a CSG can have sitting off a country's coast, he considers actions such as these the catalyst for China's development

of long-range anti-ship missiles.[167] With the estimated price of one Chinese DF-21D anti-ship being five to eleven million dollars, China could build 1227 DF-21Ds for the cost of one aircraft carrier.[168]

In Robert Rubel's publications *The Navy's Changing Force Paradigm* and *The Future of Aircraft Carriers*, Rubel shares Captain Hendrix's view and also focuses mainly on the difficulty aircraft carriers would have with a Chinese opponent. Rubel, however, takes a slightly different approach when making his argument. He disagrees that the traditional broad labels of sea control and power projection correctly describe how carriers have supported naval doctrine over the years. Instead he identifies six more specific roles that aircraft carriers have provided: eyes of the fleet, developed from the early day of scouting enemy ships; cavalry, hit-and-run style tactics used during the opening portions of World War II in battles like Midway; capital ship, a carriers ability to rule supreme on the seas; nuclear-strike platform; airfield at sea, when the carrier can operate without a threat; and geopolitical chess piece, where the United States uses carriers as a show of force.[169] In his opinion submarines support the eyes of the fleet and nuclear roles more efficiently. The TLAM overtook the cavalry position. A carrier can act as a capital ship only if it has a superior advantage over threatening missiles and a large amount of room to operate, but a good defense that keeps carriers from conducting strikes can act as a mission kill. The roles of airfield at sea and geopolitical chess piece are still around but will erode with development of friendly and potential enemy technology. Rubel believes that a carrier's long life span will outlast their utility. He admits, however, that new roles may emerge for carriers, and the members of naval aviation have been good at developing ways to incorporate themselves into the nation's battles and deterrence force.[170]

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167 Hendrix, At What Cost a Carrier? 3–8.

168 Hendrix, *At What Cost a Carrier?*, 8.

169 Rubel, "The Future of Aircraft Carriers," 14–18.

170 Rubel, "The Navy's Changing Force Paradigm," 15, 17; Rubel, "The Future of Aircraft Carriers," 21–26.

Professor Jake Douglas agrees that aircraft carriers would suffer in a war with China. He concludes that the U.S. forces would have a difficult battle in the Western Pacific, even considering the America's advantage with long-range bombers, submarines, and surface combatants, due to China's vast territory and extensive arsenal. Using PACOM Commander Admiral Locklear's testimony as evidence, he argues that the Navy will continue to deploy carriers in dangerous areas, like the seas nearest to China, despite vulnerabilities, because it has little option otherwise. He admits that one-day countermeasure and UAV technology may protect the carrier from threats, but for now the Navy plays a dangerous game and risks the death of a carrier and its crew.[171]

Ronald O'Rourke takes a different approach when viewing China's military buildup. His report entitled *China Naval Modernization: Implications for U.S. Navy Capabilities* sees a weakened U.S. Navy as fuel to strengthen China's naval ambitions. He argues for improved defenses against countering weapons, like the untested DF-21D, instead of retiring naval equipment. The DF-21 is not the first weapon in the history of naval aviation that threatened it, and the United States found defenses against those weapons.[172] Also, the analogy of a carrier being a sitting duck is not correct. The carrier is only as strong as the platforms the United States puts on it and the long lifespan of carriers proves that constant updates, including defensive systems, can eliminate threats.

New Laser Weapon systems (LaWS) like the Free Electron Laser might soon protect ships form anti-ship ballistic missiles. Lasers provide the advantage of reduced cost for each shot taken, have a large magazine, and work against highly maneuverable targets. However, lasers are still constrained by line of sight, atmospheric limitations, and thermal blooming or the scattered of light particles.[173] The Navy's effective ASW capability can help reduce the threats to the carrier from quiet submarines as long as the United States maintains a lead and continues investing in new technology.

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171 Jake A. Douglas, "Are Aircraft Carriers the New West Berlin?" March 26, 2014, The National Interest, http://nationalinterest.org/commentary/are-aircraft-carriers-the-new-west-berlin-10128.

172 O'Rourke, *China Modernization*, 61, 70.

173 Ronald O'Rourke, *Navy Shipboard Lasers for Surface, Air, and Missile Defense: Background and Issues for Congress*, CRS Report R41526 (Washington, DC: Congressional Research Service, April 1, 2014), 2–6, 23.

David Barno, Nora Bensahel, and M. Thomas Davis's publication *The Carrier Air Wing of the Future* express their belief that if the Navy willingly moves away from large deck carriers the United States will have to live with negative strategic implications for years to come. Constructing a force capability like naval aviation takes years to assemble and cannot be rebuilt quickly. A majority of the effort originates from the need to teach a pilot how to launch and recover on a pitching flight deck, training that takes years and improves with mentoring from pilots with experience. The decisions made in the 2015 Future Years Defense Program (FYDP), which may cut CVN-73, will have lasting effects on subsequent FYDPs, programs, and proficiencies.[174] Former Navy Secretary Donald Winter believes that DC leadership remains too focused on short-term goals, and the United States must fight the GWoT and not forget future battles and requirements. Efforts to save money today may have greater consequences down the road, and reductions in ship procurement might cost skills in shipbuilding. He does agree with a critic's point that change is rapid, and ships' long life cycles present challenges as equipment can become outdated.[175]

China believes in the utility of the aircraft carrier as it has started construction on its second one, which will be China's first attempt at building one indigenously, and the PLAN wants four by 2020.[176] China's first carrier, the Liaoning, became operational in 2013 and has aircraft weight issues for its 22 J-15 aircraft. Currently, the U.S. Navy does not see a threat to its supremacy from China's carriers due to weak ASW proficiency.[177] With increases in technology this could change. While a CSG may suffer in a battle near China's boarders, a strong naval capability, including carriers, may keep China's ambitions in check outside the range of a DF-21D.

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174 David Barno, Nora Bensahel, and M. Thomas Davis, *The Carrier Air Wing of the Future* (Washington, DC: Center for a New American Security, 2014), 6–7.

175 Donald C. Winter, "Navy Transformation: A Stable, Long-Term View," National Security and Defense, The Heritage Foundation, last modified March 19, 2007. http://www.heritage.org/research/lecture/navy-transformation-a-stable-long-term-view.

176 Wendell Minnick, "Experts Wary over News of China's 2nd Carrier," *Defense News*, January 25, 2014, http://www.defensenews.com/apps/pbcs.dll/article?AID=2014301250024.

177 Ibid.

2. Arms Sales

Critics provide powerful points in their discussions of threats against a CSG, however, many of them only focus on China as a potential adversary and forget the utility that aircraft carriers provide the United States with the other nations in the world that do not have the ability to oppose an operating CSG. However, this advantage might also fluctuate in opposition against carriers.

The proliferation of anti-ship/anti-aircraft weapons in smaller nations may pose a greater threat to aircraft carriers than larger countries do, as a CSG might not maintain the same defensive levels, which make operations more difficult and dangerous, when patrolling near a perceived less threatening country. Also, countries with less military power may not have to fear the loss of economic relations with the United States in retaliation for an attack. China saw a 162 percent increase in weapons exports from 2008 to 2012.[178] The top four countries that receive Chinese military export are Pakistan, Bangladesh, Bolivia, and Vietnam, and even NATO member Turkey purchased an air defense system. Many more countries might soon possess systems like the DF-21D, expanding dangerous zones for carriers.[179]

Jonathan Caverley and Ethan Kapstein see America's pursuit of expensive high tech military hardware, like the JSF, as a source of decline for U.S. arms exports. Many former customers now choose less expensive and less technical defense articles from countries like Russia and China.[180] In Caverley and Kapstein's view U.S. exports have acted as a tool of foreign policy and kept many states on America's side. The shift to pricy equipment began with the increased defense spending in support of OEF and OIF. They believe that smaller and cheaper and less advanced equipment can meet the needs of national security and bring customers back.[181]

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178 Edward Wong and Nicola Clark, "China's Arms Industry Makes Global Inroads," *New York Times*, October 20, 2013, http://www.nytimes.com/2013/10/21/world/asia/chinas-arms-industry-makes-global-inroads.html?_r=0.

179 Ibid.

180 Caverley and Kapstein, "Arms Away," 2.

181 Ibid., 1–5.

3. Asymmetric Warfare

Another type of threat to carriers is asymmetric warfare. Although irregular warfare was not a new concept, the assault on the USS *Cole* (DDG 67) highlighted the increased shift of America's adversaries to it and the threat to aircraft carriers. Attacking a CSG with multiple small suicide boats filled with explosives can provide just as effective a means of damaging or destroying a ship as a DF-21 or other anti-ship missile. Having a large concentration of manpower and equipment on a carrier makes it a high visibility target for such attacks. Iran has spent many years perfecting tactics that involve small boat attacks. These maneuvers might shut down important trade routes like the Persian Gulf. Non-state actors also find asymmetric warfare appealing and retaliation for the United States would prove difficult.[182]

4. Upgrades to Overcome Threats

There are upgrades and improvements that might assist naval aviation in developing an ability to overcome threats and maintain a high combat effectiveness. Some advantages and capabilities were lost as aircraft with specific mission sets integrated into multi-mission platforms. A cohesive data link sharing systems like the tactical targeting network technology (TTNT), which works with Link-16 Joint Tactical Information Distribution System (JTIDS) and Naval Integrated Fire Control-Counter Air (NIFC-CA), could integrate capabilities from the Navy's vast selection of systems making long range cooperative targeting possible and increasing situational awareness.[183] As the Navy strives to data link all units, these systems need a vast anti-jam capacity backed up with redundancy. With an increased intelligence capability commanders have the ability to disseminate data faster and relay intentions more effectively and clearly.[184]

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182 Molly Dunigan et al., *Characterizing and Exploring the Implications of Maritime Irregular Warfare* (Santa Monica, CA: RAND, 2012), xi–xii; Fariborz Haghshenass, "Iran's Doctrine of Asymmetric Naval Warfare," Policy Analysis, The Washington Institute for Near East Policy, last modified December 21, 2006, http://www.washingtoninstitute.org/policy-analysis/view/irans-doctrine-of-asymmetric-naval-warfare.

183 Dave Majumdar and Sam LaGrone, "Inside the Navy's Next Air War," *USNI News*, January 23, 2014, http://news.usni.org/2014/01/23/navys-next-air-war.

184 Barno, Bensahel, and Davis, *The Carrier Air Wing of the Future*, 7–8.

An upgrade in aircraft range and defensive capability and coordination would also serve naval aviation well. Today's carrier air wing is designed to operate within 200nm from a target area. With the threat of DF-21D pushing the carrier out to 900nm or more strike packages would have difficulty making the long range without air refueling and would likely encounter capable surface–to-air missiles (SAM) threats as widely proliferated, modern SAM's effective range has also increased disproportionate to carrier aircraft. To contest these increasing hazards the Navy made efforts to upgrade the electronic support and warfare performance of the EA-18G Growler and add active electronically scanned array (AESA) radar to the E-2D Hawkeye. The F-35's combat radius of 600nm does improve the situation slightly and future unmanned systems would also help.[185] The Navy plans on having six operational test X-47B UCLASS by 2020 that possibly could conduct mission in strike, intelligence surveillance and reconnaissance, tanking, jamming, and missile carrier (missile truck).[186] With increased cooperation with the Air Force, submarines, surface platforms, and the cyber community, naval aviation could systematically whittle away defensive systems and clear air corridors with jamming and anti-radiation weapons in order to conduct coordinated attacks.[187]

E. MISSION USE

1. Non-core Mission Use

An aircraft carrier's versatility to accomplish both core and non-core missions makes it a popular choice with both military and civilian leadership. The wide variety of tasks that an aircraft carrier can perform provides backing, which reinstates importance and value, but it also hinders combat effectiveness. RAND Corporation's publication *Leveraging America's Aircraft Carrier Capabilities* examines both combat and noncombat, traditional and nontraditional ways that aircraft carriers have supported and could possible support national interest. The researchers conclude that the United States

185 Barno, Bensahel, and Davis, *The Carrier Air Wing of the Future*, 11–12.

186 Ibid., 12.

187 Gordon IV, et al., *Leveraging America's Aircraft Carrier Capabilities*, 61–62; Majumdar and LaGrone, "Inside the Navy's Next Air War."

will use aircraft carriers more often to provide non-core mission support.[188] For noncombat roles a carrier excels as it can produce 400,000 gallons of fresh water daily, does not need to refuel for 23 years, can transport a large amount of supplies and equipment, and carries 90 days of self-sustaining provisions.[189] The authors advocate the mission and call for an increase in aircraft vertical lift capacity. In an opposite view, Captain Robert Watts's essay *The New Normalcy* observes the Navy's involvement in the non-core mission of humanitarian aid as detrimental to combat readiness and he questions the usefulness of aircraft carriers providing such support. He believes the ship and crew lose out on combat readiness, surge capability, and maintenance, which can negatively impacts the ship's lifespan. There are many recent examples where carriers left normal deterrence patrols to provide aid such as the USS *George Washington* (CVN-73) during the 2013 Philippine typhoon relief operation and the USS *Ronald Reagan* (CVN-76) after the Japanese 2011 tsunami. The Navy shows no sign of moving away from this mission.[190] The *Ford* class even offers a design that increases the ability to switch mission sets. Not all non-standard missions are humanitarian in nature. USS *Kitty Hawk* (CV-63) converted into a special ops platform during the opening stages of OEF.[191]

2. Core Mission Use

Traditional aircraft carrier mission use in OEF and OIF also hurt combat effectiveness, and the Navy's grasp on public support waned due to the focus on land wars. Dave Majumdar and Sam LaGrone remarked that fighting in Iraq and Afghanistan degraded naval aviation's ability to fight a sophisticated enemy.[192] In those wars the vast majority of missions required pilots only to drop bombs and conduct close air support, which relaxed combat efficiency in anti-air warfare.[193] Seth Cropsey, author of *The U.S. Navy In Distress,* agrees and adds that the Navy could only deal with the battles through

188 Gordon IV et al., *Leveraging America's Aircraft Carrier Capabilities,* xiii–xvi, 6–7, 54.

189 Gordon IV et al., *Leveraging America's Aircraft Carrier Capabilities,* 17.

190 Watts, "The New Normalcy," 48, 57.

191 Gordon IV et al., *Leveraging America's Aircraft Carrier Capabilities,* 60.

192 Majumdar and LaGrone, "Inside the Navy's Next Air War."

193 Ibid.

changing the FRP and PERSTEMPO, which over stress ships, aircraft, and crew. An example is the increase in depot level maintenance of F-18 Hornets due to heavy flight hours while supporting GWoT. He also believes that OEF and OIF lowered the Navy's strategic vision, and the Navy suffered a loss of public's support due to the focus on land wars, affecting congressional backing and funding.[194] With the budget decrease, the Navy will likely see a 20 percent decrease in the ship building numbers over the next 15-20 years.[195] Cropsey states that the slogan "A Global Force for Good" properly portrayed the Navy's attitude of focusing on humanitarian assistance missions and playing a subsidiary role in land campaigns while forgetting about the importance of maintaining maritime strength and preparing for challenges like China.[196]

Although using aircraft carriers and naval aviation on both the core and non-core missions can hinder combat effectiveness and equipment lifespan, it provides the United States with a great return on investment. Any real world mission use displays the true versatility of a carrier and allows the members of naval aviation an opportunity to exhibit their skills at adaptability to accomplish missions. Crew morale often surges when responsibilities net real world positive results. However, the Navy needs to establish a balance to prevent overburdening the crew. Humanitarian assistance builds partnerships with other nations that may provide greater deterrence than gunboat diplomacy does. Harder tasks could lie ahead, and the government should continue to fund pre deployment exercises like Air Wing Fallon and routine unit level training, which help pilots maintain core proficiencies. The reduction in flight hours while squadrons are in the home cycle endangers the health of naval aviation more than participation in crisis and land campaigns.

194 Cropsey, "The U.S. Navy In Distress," 35–38, 40; Edward G. Keating, Sarah H. Bana, and Michael Boito, *Naval Aviation Budgeting: Cost Adjustment Sheets and the Flying Hour Program* (Santa Monica, CA: RAND, 2012), vii.

195 Whiteneck et al., *The Navy at a Tipping Point*, 5, 18.

196 Cropsey, "The U.S. Navy in Distress," 44.

F. CONCLUSIONS

Critics of aircraft carriers cite the cost, force composition, alternatives, utility, and vulnerabilities as reasons to invest in other defense technologies. However, aircraft carriers provide the United States with a strong, conventional, and creditable ability to protect America's worldwide commitment and conduct contingency operations, and naval aviation possesses advantages that other technologies do not. Vulnerabilities do exist, as they do in all systems, and future technologies might oppose naval aviation more effectively. Although these challenges are difficult, aircraft carriers possess the ability to be easily upgraded with the newest defensive systems. Other issues such as mission use and manpower shortages hinder the combat effectiveness of naval aviation, and changes to OPTEMPO would help ensure that the carrier force remains at levels needed both in terms of manning and force strength. The versatile power that the carrier fleet possesses in multiple mission areas takes years to build and perfect, and a major decrease in ship construction and training would take an extended time to replace. Uncertainty has not left the world. With China and Russia's efforts to increase military and political power and COCOM hefty requirements, the United States should not harm naval aviation with further reductions in numbers. Shortsightedness is not an option if America remains committed to unquestionable self-defense and allied protection. The aircraft carrier has repeatedly answered the nations call for support and can remain a part of America's strategic future for decades to come.

V. CONCLUSIONS

Many consider naval aviation as an ace in the nation's deck of cards, and for over 70 years, it has remained a staple of American maritime strength. Naval aircraft and aircraft carriers possess an ability to accomplish a plethora of missions in humanitarian, deterrence, and combat roles. A look at the history of naval aviation reveals insight into how the Navy might deal with an attack against its autonomy and how the U.S. Navy developed institutional interest in naval aviation. If the U.S. government attempted a major reduction in the aircraft carrier fleet would naval leadership stand up publicly in protest as they did in the late 1940s? The strong passions in support for naval aviation still exist in various groups in the military, civilian government, and public/business. However, strong military support for naval aviation was not seen in the 2014 consideration not to refuel the USS *George Washington* (CVN-73), contrasting with the '40s. The majority of efforts to protect the carrier fleet emerged from a strong legislative uproar, instead of the Navy. The Navy acted dangerously, if *Wall Street Journal* writer Julian Barnes' thoughts are correct that the Navy proposed the carrier cuts only to appear tough while knowing that Congress would not approve them since it was an election year.[197]

Many of the historical administrative and budgetary decisions made in naval aviation's past, such as the creation of OP-03V and ship construction plans, still have consequences and influences for naval aviation's modern role and structure. The enormous life span of naval vessels, which can reach more than 50 years for aircraft carriers, requires the Navy to develop strategies that incorporate weapon systems bought under much different past strategic environments. The ability to upgrade carriers and aircraft help naval aviation systems stay relevant to the force requirements. Also, the Navy often seeks policies that support the established institutional interest, which is set by a select group inside the organization and ingrained in the culture. Consequently, there exist the possibility for a weapon system to receive funding even when the strategic

[197] Barnes, "Pentagon Drops Plan to Mothball A Carrier."

environment does not support it, and national interest becomes confused with the pursuit of influence. The historical example of the United States' commitment to the battleship serves as a reminder of the dangers of these actions.[198] Finding a delicate balance between interest and needs can present challenges. America might have only fought specific types of battles because resources were tied up in the support of particular weapon systems, and the military might be unprepared for certain types of fights.

In addition to institutional interest, the Navy's commitment to strike warfare and A2AD, the adaptability of naval aviation's systems and technologies, and the U.S. government's commitment to oversea interests, meant that naval aviation received support at the conclusion of the Cold War even without a major advisory. The backing naval aviation received allowed it to play critical roles, which were unexpected to many critics, in OEF and OIF. The ability of the members of naval aviation to develop new tactics and procedures to keep naval aircraft employed made vital contributions to national defense. While America's mentality toward liberal internationalism and protection of its worldwide commitment may one day change, the Obama's administration relies heavily on the capability of a strong carrier fleet in foreign policy.

Although the United States has more carriers than all other nations combined, no other country has the same worldwide commitment that America does. Free trading nations depend on the United States to maintain freedom of navigation on the seas and security stability. At times COCOMs, like PACOM's Admiral Locklear, have express concerns over the current carrier fleet's size to meet mission tasking. The amount of carriers is not the only problem vexing maritime security. The Navy has made it a habit to lower FRP and PERSTEMPO standards to continually accept tasks that negatively impact manning and material readiness.[199] A large portion of naval personnel even supported the land forces in augmentee roles. Without a decrease in mission use, a loss of capability will occur. The Navy cannot retain the same structure ability with less, unless a new technology emerges that can make a strategic change. Reductions in deployment cycles and operating cost could occur if the United States military undertook realistic

198 Halperin, Clapp, and Kanter, *Bureaucratic Politics and Foreign Policy*, 25–27, 30, 52.

199 Cropsey, "The U.S. Navy in Distress," 35.

cooperation with allied nations as the 2014 QDR outlines. Countries like the United Kingdom and Australia could assist in power projection, taking a lot of the strain off of the U.S. Navy.[200] Getting the American military, public, and government to place their security in the hands of someone else is not something that will be simple. However, if America desires to maintain the same maritime ability with increased budget cuts, cooperation can help and build stronger alliances.

Knowing when the aircraft carrier and naval aviation has reached the end of its utility is going to be a difficult task for the United States, but it has not happened yet. The carrier may still be relevant even if the loss of a CSG occurs, as many successful weapon systems suffer combat defeats. Although many fear that new carriers like the USS *Ford* (CVN-78) will outlive usefulness, naval aviation can maintain relevance well into the future with support and upgrades. However, an aircraft carrier is only as strong as the systems the United States puts on it. While critics cite the dangers that China poses to an aircraft carrier, supporters of naval aviation mention the effectiveness of defensive systems and the ability of naval aviation to restrain Chinese and other countries' maritime ambitions. For now aircraft carriers provide the United States with a strong, creditable, and conventional ability to accomplish America's worldwide commitment and conduct contingency operations, and naval aviation possesses advantages that other technologies do not. The opportunistic cost of naval aviation has yet to exceed its utility.

200 U.S. Department of Defense, *Quadrennial Defense Review*, 24.

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